

VOCATIONAL INTEREST PATTERNS OF  
TEACHING AND NON-TEACHING  
FEMALE COLLEGE GRADUATES

By  
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## CHAPTER I

### INTRODUCTION

Counselors are faced with the difficult task of assisting young people in making career decisions. The challenge and uncertainty of this task is augmented when the counselor is working with female students who are involved in making career decisions. In most instances the counselor finds himself enveloped in a myriad of confusion and helplessness stemming from the lack of pertinent research findings in this area.

This lack of research is paradoxical in a time that is marked with increased female employment opportunities and decreased discrimination by sex. Females are more in need of adequate counseling and vocational guidance than ever before. Fitzgerald (11)\* amply expresses this concern when she states: "In a time of resurgent interest and concern with effective counseling and guidance for women . . . [we] find a dearth of objective tools and a small, albeit growing, body of research" (p.136).

Many high school and college counselors presently working with females involved in vocational decisions utilize the Strong Vocational Interest Blank (SVIB). This counseling instrument has both a male and

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\*Numbers within parentheses indicate references cited in the Bibliography.

a female form. The research findings relative to the male form, however, are considerable more extensive than the data available on the female form. Nevertheless, the female form of the SVIB is widely used in the vocational counseling of females. Lewis (15) suggests that counselors may not be justified in placing the same confidence in the female form of this instrument as they place in the male form.

Women who enter college have traditionally majored in fields of specialization that may be classified as "social welfare," aesthetic," or "people oriented." Predominantly females choose college majors that cluster within the fields of education, social sciences, English, and journalism (Report of the President's Commission on the Status of Women, 16). Furthermore, it has been demonstrated by Strong (17) that females within a professional group not only have interests quite distinct from members of other professional groups, but also from subgroups within the profession itself. Strong (17) challenges the commonly accepted notion that teachers should primarily be interested in teaching young people and only secondarily interested in their subject field. He indicates that interest in a specific subject field may be a more significant vocational determinant than interest in teaching per se. This would imply that females with a subject field concentration in English, for example, may be expected to show similar vocational interest patterns independent of their interest in teaching. If Strong's position is valid, then there is a need to investigate its consequences for the vocational guidance of females.

There is, therefore, a need to investigate the relationship that exists between interest in teaching per se and interest in



specific subject fields. The purpose of this study has been to investigate the discriminative power of the SVIB when it was taken by freshmen female college students, who later graduated with different subject field specializations (e.g., English, foreign languages, mathematics, history, and elementary education) and from different college curricula (e.g., College of Education majors, College of Arts and Sciences majors with teacher certification, and College of Arts and Sciences majors without teacher certification).

#### Need for this Study

Super (19) has long contended that it should be possible to study the career developmental patterns of females as well as for males. To date, however, research has primarily dealt with the developmental patterns of males. Research dealing with female occupational choice, as one aspect of career developmental patterns, has been the most fruitful, yet, has been hampered by the high degree of homogeneity of female interests in the "social up-lift" professions and by the social expectancies of our society. The increasing number of college women that return to work after child rearing seems to indicate that the educational experiences at the college level should increasingly be viewed as actual work preparation processes as well as a "temporary" preparatory step for motherhood (Report of the President's Committee on the Status of Women, 16).

Counselors working with females at the college level are in need of research findings that will increase their understandings of the "typical" and "atypical" female student relative to the acceptance or rejection of the traditional feminine occupations (Lewis, 15).

Presently, longitudinal studies relating to female career developmental patterns are few in number and the area of research is viewed as being in its infantile stage.

It is proposed that the findings of this investigation will lay the groundwork for future longitudinal studies which will add to the counselor's knowledge of female college graduates who enter the "typical" and the "atypical" feminine professions when certain subject fields are observed.

#### Statement of the Problem

The purpose of this study was to investigate the degree of discrimination that can be achieved by the freshmen year administration of the SVIB (Women's Form) when females who have graduated from the College of Education serve as a reference group in delineating the vocational interest structure used in this study. Specifically, this study has sought answers to the following questions:

1. What is the underlying SVIB vocational interest structure of females that have graduated from the College of Education with elementary or secondary certification?
2. Will the efficiency of predicting a student's membership in a group, as determined by the independent variables, be seriously altered when a single occupational scale is used to represent each factor-occupational scale grouping, rather than utilizing all of the occupational scales that are subsumed under each factor in the female vocational interest structure of the College of Education graduates?
3. How efficiently will the SVIB discriminate between students who have graduated with the same subject field specialization but from different college curricula?
4. How efficiently will the SVIB discriminate between students from the three college curricula groups when the subject fields are ignored?

5. How efficiently will the SVIB discriminate between graduates from different subject field specializations when their college curricula groupings are ignored?

6. How efficiently will the SVIB discriminate between elementary and secondary education majors?

#### Definition of Terms

Strong Vocational Interest Blank (SVIB) - Women's Form. It is a measure of one's vocational interests interpreted in terms of twenty-nine occupations and a femininity-masculinity scale. The student's standard score, for each occupational scale, is a measure of the similarity that exists between her and the likes and dislikes of women engaged in that occupation. It is not a measure of specific or general abilities. The underlying assumption is that women engaged in one occupation have a characteristic set of likes and dislikes that differentiate them from women that are engaged in another occupation. There are 400 items and the student is required to answer each of them in one of the following ways: LIKE - INDIFFERENT - DISLIKE.

Vocational Interest Structure. The underlying dimension of communality that exists between each of the thirty SVIB scales for the students that have graduated from certain subject matter fields in the College of Education. The dimensions of this structure will be expressed in the form of factors that emerge after factor analysis of the SVIB occupational scale intercorrelation matrix.

College Curricula. For the sake of brevity and convenience the term Group A will be used to designate those students who were graduated from the College of Education; Group B will designate the

students who were graduated from the College of Arts and Sciences, but who completed teacher certification requirements before graduation; and Group C will designate those students who were graduated from the College of Arts and Sciences, but did not complete teacher certification requirements before graduation.

#### Summary

The challenge and uncertainty of vocational counseling is augmented when counselors are faced with the difficult task of assisting college females in making career decisions. Research literature pertaining to the use of the SVIE as an effective female vocational counseling instrument is very limited. It was the purpose of this study to further investigate the degree of discrimination that could be achieved by the SVIE when females were grouped by their undergraduate subject field specializations and their manifest interest in teaching.

## CHAPTER II

### REVIEW OF THE LITERATURE

The literature reviewed for this research consisted of studies that investigated the relationship between SVIB patterns and variables in the teaching profession. Generally, the emphasis of the SVIB research with the female form has been concerned with relationships between separate SVIB occupational scales and psychological measuring instruments or other established criteria. Although a large number of studies have been reviewed in developing this research, only the findings of research studies that have a direct bearing on this study will be reported. For the purposes of this study three categories were established to summarize the pertinent findings: (1) studies concerned with the use of the SVIB in differentiating between females majoring in teaching and non-teaching college curricula, (2) studies concerned with the factor analysis of the SVIB, and (3) effectiveness of the SVIB in predicting college curricula membership.

#### Studies Concerned with the Use of the SVIB in Differentiating between Females Majoring in Teaching and Non-Teaching Curricula

Stait (18) studied the SVIB occupational scales of ninety-four female freshmen students that were enrolled in an orientation

course at a teacher's college. His conclusions for his sample, based on SVIB scores and personal information, were (1) all college freshmen do not look upon teaching as their life work, (2) the majority of the women were more interested in marriage and a home, and (3) women were quite homogeneous in the interests they exhibited on the SVIB. The extremely small number of "A" ratings in occupations other than nurse and general office worker tends to support this conclusion.

Achauer (1) analyzed the SVIB scores of freshmen and seniors enrolled in various subject field specializations at a teacher's college and concluded that

The English majors and minors earned higher ratings on the Teacher of English Key than did those not qualified to teach English. There was no significant difference between the number of high ratings earned on the Teacher of Social Sciences Key by majors and minors in social science and the number of high ratings by those not qualified. Those qualified to teach Mathematics and Physical Sciences made significantly higher ratings on the Teacher Key for these subjects than those not qualified (p.69).

Anderson (4) studied a sample of female students at the University of Minnesota in an effort to ascertain the inter-group differences using the SVIB-Male Form, and SVIB-Female Form, and the Allport-Vernon Study of Values. Her sample groups consisted of female graduate students from curricula in the College of Education, the Law School, the Medical School, and the fifth year of Medical Technology. She found that differential vocational interests and values were manifest in her sample. Regarding the College of Education sample, Anderson reported that

The teaching group is characterized generally by its lack of interests comparable with men and women in other

professional groups represented by the Strong tests. In other words, the interests of this group are seemingly non-professional in character but its members have relatively strong economic and religious values.

It is concluded that values, as well as interests, played a part in the vocational decisions of these women. This can be inferred from the fact that one group can be differentiated from another in terms of both values and interests and, in some instances, values differentiate between groups where interests do not (p.851).

Hoyt (12) investigated the correlation between the SVIB scores of female college students and their career or homemaking motivation. He separated 386 freshmen into three groups based on their responses to a locally devised questionnaire concerned with post college plans. The first one was called the Career Group (N=90); the second was designated the Homemaking Group (N=67); and the third consisted of students that could not be differentiated as belonging to either the career or homemaking groups and could not, therefore, be used in his study. In discussing the differential SVIB scores of the two groups, Hoyt wrote

Homemaking-oriented girls averaged significantly higher than Career-oriented girls on eight SVIB scales: Buyer, Housewife, Elementary Teacher, Office Worker, Stenographer-Secretary, Business Education Teacher, Home Economics Teacher, and Dietician. Career-oriented girls exceeded the Homemaking group on six scales: Artist, Author, Librarian, Psychologist, Physical Education Teacher, and Physician (p.47).

Kassarjian (14) used the Inner-Other Social Preference Scale to reduce the original sample of 233 students into two groups: the inner-directed group consisting of twenty-five males and twenty-five females, and the other-directed group consisting of twenty-five males and twenty-five females. He found that seventeen of the twenty-seven SVIB occupational scales clearly showed significant differences

between the inner-directed and other-directed female students. His results show that six of the eight SVIB "teacher" scales effectively discriminated between the two groups. The mathematics and science, English, elementary education, business education, home economics, and physical education "teacher" scales all reached the .05 level of confidence.

#### Studies Concerned with the Factor Analysis of the SVIB

Much work had been done on item analysis and intercorrelation of vocational interest scores when researchers began to look for something more functional in the investigation of vocational interests. The present utilization of "interest patterns" rather than scores on separate occupational scales is a direct result of the occupational scale groupings of vocational interest fostered by factor analysis.

The focus of factorial studies with the SVIB has been concerned primarily with the male form. The results of factorial studies by Thurstone (20) and Carter, Pyles, and Butnall (7) have generally supported Strong's position "that four or five factors are sufficient to account mathematically for all or nearly all of the variations in interests among the occupational groups so far studied" (17, p.147). The results and implications of these earlier factorial studies of the male form of the SVIB have served as a basis for the need of occupational groupings of the separate occupational scales in both the male and female form of the SVIB. Strong (17) has long contended that ". . . there is much more agreement than disagreement between the two classifications of occupations among men and women" (p. 166).



Strong (17) factor analyzed the 19 by 19 occupational scale intercorrelational matrix based on the responses of 500 married women. Five factors were required to account for nearly all of the inter-occupational scale variance. Interests of housewives, office workers, stenographers, and nurses loaded heavily (.85 to .66) with Factor I; whereas, the interests of social workers, English teachers, librarians, and authors loaded negatively (-.778 to -.667) with the same factor. Heavy positive loadings on Factor II occurs with social science teachers and Y.W.C.A. workers (.812 to .743) while the interests of artists and authors were negatively loaded (-.805 to -.605). The third factor included the interests of physicians and those of mathematic and science teachers loading positively (.683 to .654). Slight negative loadings occurred in the interests of authors (-.325) and life insurance saleswomen (-.250). Factor IV had only one heavy positive loading--life insurance saleswoman (.612) and one heavy negative loading scale--English teacher (-.573). The fifth factor had relatively low negative and positive loadings (.438 to -.305) leading Strong to remark, "Factor V has questionable value and can very well be disregarded" (p.164).

Crissy and Daniel (8) applied the rotation of axes factorial procedure to the same intercorrelational matrix for 500 women that Strong had previously factor analyzed. The Crissy and Daniel analysis, though subsequent to that of Strong and modeled upon the rotation of axes principle, produced a factor structure very comparable to Strong's. Since the resulting factor loadings of the occupational scales on the first four factors of Strong's analysis and Crissy and Daniel's analysis agree almost perfectly (the largest difference

being .06 on the English teacher scale loading on Factor IV), they will not be repeated here. Crissy and Daniel named their four factors and divided the occupational scales into the following groups:

I. INTEREST IN MALE ASSOCIATION - housewife, general office worker, nurse, author, librarian, artist\*

II. INTEREST IN PEOPLE - lawyer, Y.W.C.A. secretary, social science teacher, artist, dentist, author

III. INTEREST IN LANGUAGE - English teacher, teachers in general, librarian, general office worker, stenographer-secretary, life insurance saleswoman

IV. INTEREST IN SCIENCE - physician, dentist, teacher of mathematics and physical science, author, life insurance saleswoman, teacher of English, and stenographer-secretary

Darley's factor analysis of the SVIB yielded five factors from which he derived the following occupational scale groupings (9):

I. TECHNICAL - dentist, physician, teacher of mathematics and physical science

II. VERBAL and LINGUISTIC - author, librarian, artist

III. BUSINESS CONTACT - life insurance saleswoman

IV. WELFARE or UPLIFT - teacher of social science, lawyer, Y.W.C.A. secretary, social worker

V. NON-PROFESSIONAL INTERESTS - general office worker, nurse, stenographer-secretary, housewife

As a result of their factor analysis of the SVIB scores for 102 college women, Wittenborn, Triggs, and Feder (21) delineated an occupational scale grouping that is very similar to the Darley (9) occupational scale grouping.

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\*Negative factor loadings are underlined.

- I. Author, librarian, artist
- II. General office worker, stenographer-secretary, nurse
- III. English teacher
- IV. Lawyer, social worker, social science teacher, Y.W.C.A. secretary
- V. Dentist, teacher of mathematics and physical science, physician
- VI. Life insurance saleswoman

Anderson (2) factor analyzed the 29 by 29 intercorrelation matrix of the SVIB scores of 203 freshmen and sophomore students enrolled in an introductory course in the College of Health Related Professions at the University of Florida. He delineated nine factors with occupational scale loadings between  $-.35$  and  $+.35$ .

The first five factors of Anderson's study were bipolar in nature. Factor I included housewives, stenographer-secretaries, business education teachers, elementary teachers, and office workers with heavy positive factor loadings (.880 to .506); whereas physicians, artists, authors, librarians, and psychologists loaded negatively ( $-.384$  to  $-.749$ ). Factor II involved interests of social workers, buyers, English teachers, life insurance saleswomen, musician performers, musician teachers, and the femininity-masculinity scale loaded positively (.628 to .375); whereas the interests of laboratory technicians, physicians, dentists, librarians, and mathematicians and science teachers are loaded negatively ( $-.887$  to  $-.384$ ). Factor III involved the interests of life insurance saleswomen, lawyers, and psychologists loading positively (.799 to .445); whereas housewives and elementary teachers are loaded negatively ( $-.471$  to  $-.370$ ). Factor IV included the interests of occupational therapists, home

economic teachers, nurses, and the femininity-masculinity scale loaded positively (.758 to .385); whereas only the librarian scale loaded negatively (-.766). Factor V had the two physical education teacher scales loaded positively (.399 and .751), whereas only the librarian scale loaded negatively (-.413). Factor VI included the interests of the social workers, physical education teachers (college level), social science teachers, and Y.W.C.A. secretaries loaded positively (.392 to .786). Factor VII had elementary teachers, English teachers, and social science teachers loading positively (.710 to .389). Factor VIII showed the interests of dieticians, and home economic teachers loading positively (.648 to .662). Factor IX had the interests of musician performers and musician teachers loading positively (.549 to .490).

The factor loadings of each occupational scale and practical "reasonableness" executed by Anderson resulted in the following occupational scale groupings:

I. Housewife, elementary teacher, English teacher, social science teacher, social worker, Y.W.C.A. secretary

II. Physician, laboratory technician, dentist, mathematics and science teacher

III. Artist, author, librarian

IV. Stenographer-secretary, business education teacher, buyer, office worker

V. Dietician, home economics teacher

VI. Occupational therapist, nurse

VII. Lawyer, life insurance saleswoman, psychologist

IX. Physical educational teacher (college level), physical education teacher

The findings of his study indicated that twice as many factors were needed to account for the vocational interest variations (96.8 per cent) in the female form as that for the male form of the SVIB. Anderson's hypotheses for this strange phenomenon were: (1) female interests are more complex than male interests, (2) previous factor analytical studies of the male form were completed by hand rotation of factors, and (3) the possibility of "unique" characteristics in his sample group.

#### Effectiveness of the SVIB in Predicting College Curricula Membership

In predictive studies utilizing the SVIB, the researcher is faced with the problem of establishing a suitable criterion. The establishment of a suitable criterion for vocational interest research is particularly important when the researcher proposes to develop group expectancy equations for vocational guidance purposes. Group membership may be defined in many ways. There is, therefore, a need to clarify the criterion employed in defining group membership. To illustrate this, three studies will be reviewed that represent three different types of group membership. These types of group membership are graduation from different college curricula, enrollment in different college curricula, and preference for different college curricula.

Serdie (6) investigated the relationship between the field of study that 219 male and 252 female freshmen students were later graduated from and the following variables: Thurstone Primary Mental Abilities Test, Strong Vocational Interest Blank (male and female form used appropriately), Co-Op Social Studies Test, Co-Op Natural

Science Test, Co-Op Mathematics Test, Minnesota Personality Inventory, American Council on Education Psychological Examination, Co-Op English Tests, and scholastic rank in the high school graduating class.

Included in the between-curricula group membership analyses were 158 female students. The curricula groups represented by the female students were nursing (N=35), medical technology (N=25), business (N=20), elementary education (N=17), B.S. in social science (N=15), B.A. in social science (N=13), librarian (N=12), language (N=11), and journalism (N=10).

Four of the achievement tests and three of the primary mental abilities tests differentiated between the curricula groups for the college freshmen. Four of the six vocational interest scales on the female form of the SVIB differentiated among the curricula groups at the .01 level of confidence. The librarian scale failed to differentiate significantly and the general office worker scale had non-homogeneous variance. The vocational interest scales were more effective in differentiating among the curricula groups for both men and women than were any of the other tests. Berdie stated that "the prediction of which curriculum a student will graduate from can be made better with an interest test than with either aptitude tests or achievement tests" (6, p.114).

Duntesan (10) investigated the SVIB occupational scores for 200 female students that were either juniors, seniors, or graduates from their respective programs. The sample group represented the following curricula at the University of Florida: medical technology (N=41), occupational therapy (N=46), physical therapy (N=27),

nursing (N=61), and education (N=25). His study was designed to determine if the twenty-nine scales of the SVIB could differentiate among the above groups of students.

Duntzman used a multiple linear discriminant function analysis to isolate discriminant function values that would produce the maximum separation between the five curricular groups. He used three methods of selecting the variables that were used in the discriminant analysis. The first method used all twenty-nine of the SVIB scales. The second method used the eleven SVIB scales that had the highest  $F$  ratio value. The third method utilized the eleven scales that had the highest discriminant function weights. Curricula group membership was then computed for each individual using the total discriminant function space. Duntzman's conclusions were

Multiple discriminant function analysis disclosed that groups of students majoring in Occupational Therapy, Physical Therapy, Medical Technology, Nursing, and Education could be successfully distinguished from each other, on the basis of the twenty-nine scales of the Strong Vocational Interest Blank for Women. Furthermore, two discriminant analyses using eleven scales also indicated successful discrimination. . . . It was concluded that the SVIB should be a useful instrument for discriminating between college majors when utilizing discriminant function analysis.

Anderson and Barry (3) identified four groups of students on the basis of their intentions to enter the following fields of specialization within the health related professions: occupational therapy (N=58), physical therapy (N=43), medical technology (N=41), and "others" (N=64). This "other group" included students that were interested generally in the health and rehabilitation professions. The factor-occupational scale groupings that resulted from a previous

factor study by Anderson (2) were utilized to ascertain the degree of differences among the groups in this study. The discriminant analysis for examining differences among groups resulted in a Chi-square value of 148.65. Testing this value with 27 degrees of freedom indicated that a statistical difference among groups was reached beyond the .01 level of confidence.

The investigators constructed optimizing equations for predicting actual group membership from the discriminant function analysis. A classification matrix which compared predicted and actual group membership was constructed. It showed that the prediction equations correctly classified 107 of the 206 students (50.45 per cent) into one of the four groups in which they had indicated a preference. Of the fifty-eight girls that preferred medical technology, forty-one or 70.6 per cent were correctly classified. Fifty-one per cent of the occupational therapist group were correctly identified. The physical therapist group represented the poorest performance of the SVIB equations. Of this group only 31.7 per cent were properly classified. Thirty-three students in the occupational therapist group were misplaced, resulting in a 48.8 per cent correct classification for this group.

Regarding the use of the SVIB as a variable in discriminant analysis of female curricula group differences, Anderson and Barry wrote

While it would not be surprising to find differences in vocational interests among university-wide samples of students, it seems very encouraging to find that the SVIB is sensitive to vocational interest differences in relatively homogeneous samples of beginning female students in the health and rehabilitation professions.



The use of discriminant function analyses, as illustrated herein, appears to be a feasible and promising method for discovering student characteristics that differentiate in and are peculiar to specific student groups, e.g., PT's, OT's, etc. It is expected that with improved differentiating variables, information will be available both for the selection and advisement of students into or out of these health-related professions (3, p.184).

#### Summary

Research investigations of the relationship between the Strong Vocational Interest Blank, Women's Form, and variables associated with the teaching profession are very limited in number. From the review of literature reported in this chapter the writer has drawn the following conclusions:

1. The vocational interests of females, as indicated on the SVIB are, in general, more homogeneous than those of men.
2. The SVIB has proven to be an effective instrument in differentiating among groups of female students majoring in various college curricula.
3. Factor analysis results of the SVIB scores for college women generally support Strong's position that only four or five factors are needed to account for nearly all of the variations among the separate SVIB occupational scales.
4. Predictor equations based on the discriminant function analysis technique may prove to be a very valuable research "tool" in investigating differential vocational interests of females majoring in different college curricula.

5. Research studies using the SVIB as an independent variable for the investigation of differential vocational interests of females enrolled in teaching and non-teaching college curricula are few in number.

## CHAPTER III

### PROCEDURES AND ANALYSIS OF DATA

The design of this study followed a basic two-way classification schema that permitted separate analyses of subgroups that were delineated by two independent variables and their interactions. These variables are college curricula and subject field of concentration. Three groups of students were classified by the college curricula variable. Group A consisted of students that were graduated from the College of Education. Graduates from the College of Arts and Sciences that had completed teaching certification requirements formed Group B. The students that had graduated from the College of Arts and Sciences without teaching certification were assigned to Group C. The dependent variables that were investigated were the standard scores achieved by each of the 333 students on the twenty-nine occupational scales and the Femininity-Masculinity scale of the Strong Vocational Interest Blank for Women.

#### Procedure

##### Selection of Subjects

Facilities of the Data Processing Division of the Registrar's Office were used to obtain the names and student identification numbers of all females who had graduated from the University of Florida

prior to December, 1965, and were members of the September 1959, 1960, and 1961 freshmen classes. From this population (N=823) the students who were graduated from the College of Education or the College of Arts and Sciences were included in this study if they had completed the SVIB as part of their entering freshmen requirements, and had subject field specializations that were represented in all three college curricula groups (Table 1).

TABLE 1  
COMPOSITION OF SAMPLE BY SUBJECT FIELDS AND GROUPS\*

Subject Field	Group A	Group B	Group C
	N	N	N
English	44	39	48
Foreign Lang.	9	16	17
History	15	8	5
Mathematics	10	7	14
Biology	5		
Business Educ.	20		
Political Sci.	5		
Sociology	7		
Speech Therapy	13		
Elementary Educ.	51**		
	<u>N=179</u>	<u>N=70</u>	<u>N=84</u>

\*Group A denotes the graduates from the College of Education. Group B denotes the graduates from the College of Arts and Sciences with teaching certification. Group C denotes the graduates from the College of Arts and Sciences without teaching certification.

\*\*The 51 elementary students used in this study were drawn at random from a total of 186 students.

#### Delineation of Groups

The first step was to assign students to their respective groups, as determined by the subject field of specialization and college curricula variables. This was accomplished by entering each

student's permanent file and ascertaining the field of specialization, and whether or not the student had graduated with NCATE (National Council for Accreditation of Teacher Education) certification.

Four subject fields, English, foreign language, history, and mathematics were represented by a sufficient number of students in each of the three college curricula groups. These four subject fields were then used as the four groupings of the subject field variable in determining the two-way classification matrix shown in Table 1. Six additional subject fields (biology, business education, political science, sociology, speech therapy, and elementary education) were combined with the other subject fields in Group A (English, foreign language, history, and mathematics) in the delineation of the vocational interest structure of the College of Education graduates. The inclusion of these six additional groups was dictated by the "typical" distribution of subject fields represented by graduates from the College of Education and the number of students needed to derive "meaningful" data from the factor analysis technique.

#### Analysis of Data

For the purpose of reporting the procedures that were used in analyzing the data for each question raised by this study, a format will be employed that consists of a statement and a discussion of the question that will be followed by an explanation of the statistical procedures that were used.

What is the underlying SVIB vocational interest structure of females that have graduated from the

College of Education with elementary or secondary certification?

The purpose of this question was to ascertain the number of factors that were necessary to account for all, or nearly all, of the variations among the scores for the thirty SVIB scales. These factors then represented the thirty separate SVIB scales in a factor dimension of  $p$  factors. Each factor contained the SVIB scales that had a base of communality among the other scales that were included in that factor  $x$  dimension within the total  $p$  factor dimension. The  $p$  factor dimension then served as a reference base for ascertaining the underlying SVIB vocational interest structure of the graduates from the College of Education. This factor dimensional reference base was then applied to groups or combinations of subgroups in answering the remaining questions that have guided this study.

The standard scores for each of the thirty SVIB scales were intercorrelated for the 179 students that had graduated from the College of Education (Group A) disregarding their subject field specializations. The resulting 30 X 30 intercorrelation matrix was factor analyzed by the principal component solution and orthogonal rotation of the factor matrix. Positive eigenvalues\* equal to, or greater than, one in the principal diagonal effectively traced the factor communalities that constitute the findings of this question.

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\*In this case, an eigenvalue is defined as the sum of the squares of the thirty occupational scale factor loadings for each factor. When this sum, for each factor, is divided by the number of variables under consideration an estimate of the per cent of variance accounted for by each factor results. For example, a factor eigenvalue of one indicates that this factor accounts for only 3.33 per cent of the total inter-occupational scale variability.

Will the efficiency of predicting a student's membership in a group, as determined by the independent variables, be seriously altered when a single occupational scale is used to represent each factor-occupational scale grouping, rather than utilizing all of the occupational scales that are subsumed under each factor in the female vocational interest structure of the College of Education graduates?

This question was formulated to ascertain the degree of efficiency that could be achieved by reducing the number of occupational scales that were used in predicting a student's actual group membership. Specifically, two methods of predicting a student's actual group membership were compared. The first method utilized all of the  $x_n$  occupational scales subsumed under each of the  $x$  factors in the  $p$  factor dimension for predicting a student's actual group membership. The second method used only the single occupational scale with the largest factor loading on each of the  $x$  factors in the  $p$  factor dimension in predicting a student's actual group membership. The main concern of this question was to validate a more practical procedure, that of predicting group membership, based on SVIR scores. Such a procedure could be used by counselors working with females in their choice of a general subject field and/or their choice of entering a teaching or non-teaching curricula.

The discriminant function statistic was used in ascertaining the degree of classification efficiency achieved by the two methods. The discriminant function statistic is a multivariate technique designed to maximize the degree of discrimination that can be achieved among groups on the basis of the intercorrelated variables under consideration. The intercorrelated variables used in this study were the transformed SVIR scores for each of the 333 students. This

transformation to a  $\bar{I}$  score distribution (with a mean of 50 and a standard deviation of 10) was necessary to remove negative SVIB scores and adapt the data for the computer programming used for this study. The generalized Mahalanobis  $D^2$  statistic value is tested by the Chi-square table with  $\underline{n}(\underline{g}-1)$  degrees of freedom to test the hypothesis that the mean values are the same in all the  $\underline{g}$  groups for these  $\underline{n}$  variables. This over-all test of differences in mean values for the several groups being compared must precede the analysis since it must be determined whether the samples come from the same multivariate population. Johnson states, "If the null hypothesis is accepted, e.g., that the samples came from the same multivariate population, obviously there is nothing to be gained by trying to effect any discrimination" (13, p.450). The  $\underline{x}$  factors in the  $\underline{p}$  factor dimension represent the intercorrelated variables ( $\underline{n}$ ) that were used in the discriminant function analyses in the investigation of the two methods of group membership prediction (Anderson, 5, pp. 137-153).

Each  $\underline{x}$  factor variable used in the discriminant function analysis in the first method was determined by the number of occupational scales subsumed under that  $\underline{x}$  factor and the squared value of the  $\underline{x}$  factor loading of each occupational scale. The squared  $\underline{x}$  factor loading is used as a constant in multiplying the respective occupational scale score achieved by each individual in a specific group. The means of the multiplied occupational scores in the respective  $\underline{x}$  factor are then used as the group score on that variable. This process is repeated for each of the  $\underline{x}$  factors. It is these scores, combined by each  $\underline{x}$  factor, that served as the correlated variables that were used in the discriminant analysis validation of the first method.



In the second method, rather than utilizing all of the occupational scales that are subsumed under each of the  $\underline{x}$  factors, only one occupational scale that had the highest  $\underline{x}$  factor loading was used. The  $\underline{x}$  factor loading of this single occupational scale was then squared and used as a constant in multiplying the score that each individual, in each group being compared, achieved on this occupational scale. This process is then repeated for each of the  $\underline{x}$  factors. These scores, for each  $\underline{x}$  factor, were then used in the discriminant analysis of the same groups that were analyzed in the first procedure. The results of both methods were then compared by constructing a two-way classification matrix with the actual group membership as one variable and predicted group membership as the other variable. This cross validation of the two methods of prediction will serve as the criterion for eliminating one of them and retaining the other for comparisons to be made in answering the remaining questions of this study.

How efficiently will the SVIB discriminate between students who have graduated with the same subject field specialization but from different college curricula?

This question investigates the discriminant power of the SVIB in differentiating between subgroups of students who have a "common" subject field interest but who perhaps manifest a differential interest in teaching as represented by the choice of college curricula. This "blocking" by subject field permitted one of the independent variables to be "controlled" while the vocational interests of the groups at each level of the second variable were investigated.

■

Inferences based on the differential vocational interests of the groups at the various levels of the second independent variable were then made.

The underlying vocational interest structure for the College of Education graduates served as the intercorrelated variables used in the discriminant function analyses of group differences. Four separate discriminant function analyses were made to investigate the differences between graduates from the three college curricula groupings when the English, foreign language, history, and mathematics subject fields were controlled.

The weighting, that was necessary for each variable in the discriminant function analysis to obtain maximum separation between the groups of students in each subject field, provided a basis for comparing the relevance of that variable to the discriminant function solution in maximizing the between group differences. A second comparison was made regarding the relevance of a specific factor as its weighting value shifted when different subject fields were compared.

How efficiently will the SVIB discriminate between students from the three college curricula groups when the subject fields are ignored?

This question served as a paradigm for investigating the differences, or similarities, of the vocational interests of students that were separated by the college curriculum variable when the same subject fields were represented in each group. English, foreign language, history, and mathematics represented the subject fields that were "collapsed" within each group.

The p factor dimension representing the underlying vocational interest structure of the College of Education graduates was again used as the intercorrelated variables for the between group discriminant function analysis. The weightings that were needed for each variable in the discriminant function equation was investigated by inter-group comparison.

How efficiently will the SVIS discriminate between graduates from different subject field specializations when their college curricula groupings are ignored?

This question was designed to investigate the discriminative power of the SVIS in differentiating between groups of students that graduated with different subject field concentrations, disregarding their college curricula grouping. The three college curricula groupings were "collapsed" and the comparison was made between the four areas of subject field specialization.

Discriminant function analysis, based on the p factor dimension, was used to investigate this question. The weightings required for each variable in the discriminant function solution to obtain maximum separation between the subgroups were studied. The effectiveness of the classification, based on the SVIS scores of each subgroup member, was determined by a two-way classification matrix using actual and predicted group membership as the determinants.

How efficiently will the SVIS discriminate between elementary and secondary education majors?

This question attempts to delineate possible vocational interest differences that may exist between graduates from the College

of Education in two distinct levels of teaching. The elementary education graduates were compared to graduates in the separate subject fields of English, foreign language, history, and mathematics. The selection of these particular College of Education subject fields was based on the utilization of these subject fields in previous comparisons of this study and in the limitation of five groups in the discriminant function computer program.

#### Summary

This study was designed to follow a two-way classification schema that permitted separate analyses of students grouped on the basis of two independent variables and their interactions. Graduation from the College of Education, the College of Arts and Sciences with teaching certification, and the College of Arts and Sciences without certification determined the three groupings of the college curricula variable. English, foreign language, history, and mathematics delineated the four groupings of the subject field variable. The dependent variables that were investigated by factor analysis and discriminant function techniques were the standard scores of 333 female graduates of the University of Florida on the Strong Vocational Interest Blank for Women.

## CHAPTER IV

### FINDINGS AND DISCUSSION

#### Underlying Vocational Interest Structure

In answering the first question of this study, "What is the underlying vocational interest structure of females that have graduated from the College of Education with elementary or secondary certification," the analysis revealed six bipolar factors and the resulting six factor-occupational scale grouping (Table 2). The SVIB vocational interests of these students appear to be more similar to females engaged in vocations described as clerical and culinary, musical, feminine, people oriented, adult persuasive, literary (English teachers), and professional sciences; as contrasted with the interests of females engaged in professional, technical and scientific, and health related vocations.

The thirty SVIB scales for each of the 196 graduates from the College of Education were used to produce product-moment correlations and factor analytic results. The 30 by 30 intercorrelation matrix shown in Table 15 of the Appendix was factor analyzed by a principal component solution and an orthogonal rotation of the factor matrix.

The delineation of eighteen principal component factors effectively traced the factor matrix and accounted for 93.10 per cent of the total variance. The extraction of rotated factors was

TABLE 2

VOCATIONAL INTEREST GROUPING BASED ON THE FACTOR LOADINGS  
OF THE THIRTY SVIB SCALES  
(N=179 College of Education Graduates)

Factor description	Occupational scales*
I Clerical and culinary versus the <u>professional</u> vocations	buyer, housewife, elementary teacher, office worker, stenographer-secretary, business education teacher, home economics teacher, dietitian, <u>artist</u> , <u>author</u> , <u>librarian</u> , <u>psychologist</u> , and <u>physician</u>
II Musical and femininity versus <u>technical</u> and <u>scientific</u>	musician teacher, musician performer, femininity-masculinity, <u>dentist</u> , <u>laboratory technician</u>
III People	social worker, social science teacher, Y.W.C.A. secretary
IV Adult persuasive versus <u>health related</u>	lawyer, life insurance saleswoman, <u>physical education teacher</u> (college), <u>occupational therapist</u> , <u>nurse</u> , <u>physical therapist</u>
V English teacher	English teacher
VI Professional sciences	mathematics-science teacher, engineer

\*Negative loading occupational scales are underlined.

terminated when the eigenvalue of a factor was less than one. The eighteen factors were orthogonally rotated through nine iteration cycles and the original and final communalities agreed to the fifth decimal place. Of the eighteen rotated factors, six had eigenvalues equal to or greater than one, and accounted for 85.59 per cent of the total variance. These six factors, with occupational scale loadings of plus or minus .40 or greater in magnitude, delineate the p factor dimension used in describing the underlying vocational interest structure of the College of Education graduates (Group A). These results constitute the major findings of the first question in this study and are presented in Table 3. The factor loadings for all of the thirty SVIB scales on each of the six factors is shown in Table 16 of the Appendix. The means and standard deviations of the thirty SVIB scales for each of the groups used in this study are shown in Table 17 through Table 21 in the Appendix.

All six factors are bipolar in nature. Factor I involved eight occupational scales loading positively within a range of .645 and .944. Of the eight positive loading scales five are identified by Factor I only (single factor complexity); whereas, the buyer, elementary teacher, and home economics teacher scales are also identified by Factor IV. Apparently, the housewife, office worker, stenographer-secretary, and business education teacher scales with significant loadings on Factor I only, describe interests that are very homogeneous for the Group A students. Six scales had significant negative loadings on Factor I. The artist and author scales represented homogeneous interests that are highly dissimilar (-.823 and -.869 respectively) to the interests of Group A students.

TABLE 3

MAJOR FACTOR LOADINGS FROM THE STRONG VOCATIONAL  
INTEREST BLANK FOR WOMEN\*\*  
(N=179 College of Education graduates)

Occupational Scales	Factor						h <sup>2</sup> ***
	I	II	III	IV	V	VI	
Artist	-.823*						.911
Author	-.869*						.956
Librarian	-.693				-.461		.823
English Teacher	-.468	.444	.473		-.467*		.885
Social Worker (Rev.)			.799*				.794
Psychologist	-.635*		.443			.492	.862
Lawyer			.416	.559*		.475	.894
Social Science Teacher			.884*				.892
Y.W.C.A. Secretary			.875*				.859
Life Ins. Saleswoman				.702*	.432		.794
Buyer	.645*			.468			.812
Housewife	.815*						.893
Elementary Teacher	.588*			-.410			.912
Office Worker	.910*						.949
Stenographer-Secretary	.743*						.819
Business Ed. Teacher	.944*						.916
Home Econ. Teacher	.735*			-.485			.842
Dietitian	.742*						.752
Phys. Ed. Teacher (Coll.)			.478	-.625*		.402	.810
Occupational Therapist				-.844*			.776
Nurse				-.819*			.741
Math.-Science Teacher		-.412		-.512	-.421	.461*	.942
Dentist		-.591*		-.484			.871
Laboratory Technician		-.545*	-.443	-.541			.922
Physician	-.729*	-.482					.897
Musician Teacher		.804*		.400			.826
Musician Performer		.923*					.882
Physical Therapist				-.863*			.904
Engineer						.858*	.860
Femininity-Masculinity		.644*				-.439	.682

\*The occupational scale has been assigned to the factor appearing at the top of this column in delineating the factor-occupational scale groupings.

\*\*Blank cells indicate loadings between -.40 and +.40.

\*\*\*The notation h<sup>2</sup> denotes that part of the total variance of each occupational scale which is attributable to the six common factors of the vocational interest structure.



The librarian, English teacher, psychologist, and physician scales (loadings of  $-.623$ ,  $-.468$ ,  $-.635$ , and  $-.729$ , respectively) also showed a contrast of vocational interests when one describes the interests of students who have graduated from the College of Education.

The second factor for the Group A students is described by vocational interests that are similar to English teachers, musician teachers, musician performers, and "typical" females (loadings between  $.444$  and  $.923$ ); whereas the interests of mathematics-science teachers, dentists, laboratory technicians, and physicians (between  $-.412$  and  $.591$ ) are indicated as being dissimilar to graduates from the College of Education. The positive loading musician performer scale is of the single factor complexity type.

Factor III may well be thought of as a unipolar factor because of the single minimal negative loading ( $-.443$ ) of the laboratory technician scale. Eight scales loaded positively on Factor III between the range of  $.400$  and  $.884$ . The social worker, social science teacher, and Y.W.C.A. secretary scales are of the one factor complexity type (loading  $.799$ ,  $.884$ , and  $.875$ , respectively); whereas the English teacher ( $.473$ ), the psychologist ( $.443$ ), the lawyer ( $.416$ ), and the physical education teacher--college ( $.476$ ) loaded on two or more of the other factors. The music teacher had a minimal positive loading on this factor while it loaded heavily ( $.804$ ) on Factor II.

Three scales loaded positively on Factor IV, lawyer ( $.559$ ), life insurance saleswoman ( $.702$ ), and buyer ( $.488$ ). The negative loadings of Factor IV were represented by nine occupational scales within the range of  $-.410$  and  $-.863$ . All positive loading scales were also represented on one or more of the other factors; whereas

three of the nine negative loading scales were of the single factor complexity type (occupational therapist  $-.844$ , nurse  $-.819$ , and physical therapist  $-.863$ ).

The four scales loading on Factor V suggest that this factor may be conceived as being unipolar because of the low positive loading (.432) of the life insurance saleswoman. The significance of Factor V in the  $p$  dimension may be negligible because of the minimal negative loadings of the librarian ( $-.461$ ), the English teacher ( $-.467$ ), and the mathematics-science teacher ( $-.421$ ) scales.

The last factor to be described in the  $p$  factor dimension is Factor VI. The minimal negative loading of the femininity-masculinity scale ( $-.439$ ) suggests that Factor VI may be viewed as a unipolar factor. Four of the five positive loading scales are of minimal magnitude and each has significant loadings on at least two other factors (psychologist .492, lawyer .475, physical education teacher--college .402, and mathematics-science teacher .461). The engineer scale loads heavily on Factor VI (.868) and corroborated the negative loading of the femininity-masculinity scale.

In answering this question it was revealed that the graduates from the College of Education manifest a high degree of homogeneity in their SVIB vocational interests. This statement is corroborated by the finding that fifteen of the thirty SVIB scales were of the single factor complexity type. In comparing this finding to a factor analysis of the SVIB that used college freshmen and sophomores as subjects (Anderson, 2) the following comparisons can be made.\*

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\*The engineer and physical therapist scales of this study

1. Eight of the thirteen scales in this study were also of the single factor complexity type in Anderson's study (artist, author, Y.W.C.A. secretary, office worker, stenographer-secretary, business education teacher, occupational therapist, and nurse).

2. Five of the single factor complexity scales of this study were of the two factor complexity type in Anderson's study (social worker, social science teacher, housewife, dietitian, and musician performer).

3. Four of Anderson's single factor complexity scales were found to be of the two or higher complexity type in this study: one was of the two factor type (dentist), two were of the three factor complexity type (laboratory technician, and lawyer), and one was of the four factor complexity type (mathematics and science teacher).

4. The eight scales that had a significant positive loading on Factor I of this study also loaded positively on Factor I in Anderson's study. Six of the seven scales that loaded negatively on Factor I of this study also loaded negatively on Factor I of Anderson's study. The English teacher that loaded at  $-.468$  on Factor I in this study loaded positively on Factor II and Factor VII in Anderson's study. It appears, therefore, that Factor I described essentially the same vocational interests for the two sample groups involved.

Three hypotheses are tenable for the overall dissimilarity of factor structure results of the two studies: (1) the difference in

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were not represented in his study. Anderson's study included a physical education teacher scale, in addition to the physical education teacher--college scale, that was not included in this study. Therefore, the one factor complexity type occupational scale comparison made above resides in thirteen scales from this study and twelve from his study.

criterion for extraction of rotated factors, (2) the dissimilarity of the two college samples (Anderson's study dealt with enrolled students expressing a preference for a subject field major; whereas this study dealt with a sample of graduates from different college majors), and (3) the complexity of female vocational interests.

#### Two Methods of Computing $D^2$

The second question of this study was designed to cross-validate two methods of selecting the variables that would be used in the discriminant function analysis of maximizing the differences of SVIB occupational scale scores for group comparison purposes. One method employed the occupational scale with the highest factor loading value to represent each factor-occupational scale grouping and the second method utilized all of the significantly loading occupational scales in each factor-occupational scale grouping to represent the variables that were used in the discriminant function analyses. The analysis of both methods, when applied to graduates from the English and foreign language subject fields, revealed that the efficiency of correct group membership prediction was not seriously altered when the highest factor loading scale was used to represent each factor-occupational scale grouping, rather than utilizing all of the significantly loading occupational scales in each factor-occupational scale groupings as variables in the discriminant function analysis. This finding allowed the writer to propose a negative answer to the second question of this study, which stated, "Will the efficiency of predicting a students's membership in a group, as determined by the independent variables, be seriously altered

when a single occupational scale is used to represent each factor-occupational scale grouping, rather than utilizing all of the occupational scales subsumed under each factor in the female vocational interest structure for the College of Education graduates."

Table 22 and Table 23, respectively, in the Appendix show the discriminant function variable mean scores achieved by the three English curricula groups when the highest factor loading occupational scale and all significantly loading occupational scales by factor-occupational scale grouping methods were used in selecting the discriminant function variable. Both methods indicated a significant difference ( $p=.01$ ) between the means of the six discriminant function variables for the three English curricula groups.

The efficiency of the discriminant function analysis based on the method of utilizing all significantly loading scales per factor-occupational scale groupings in selecting the discriminant function variables used in predicting the group membership for the English majors is shown in Table 4.

The efficiency of correct classification of the English majors who were Group A members (College of Education graduates) was 54.50 per cent. Twenty-two of the thirty-nine students in Group B (Arts and Sciences students following a teaching certification program), or 56.40 per cent were correctly identified. Arts and Sciences students who did not follow a teaching certification program (Group C) were correctly identified by their discriminant function values at a 56.20 per cent efficiency level. A comparison of the combined groups following a teacher education program (Group A and Group B) and those not in a teacher education program (Group C),

resulted in a 83.10 per cent correct classification of the former and a 56.20 per cent of the latter.

TABLE 4

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED CURRICULA GROUP MEMBERSHIP FOR THE ENGLISH MAJORS BASED ON THE  $D^2$  VALUE OF EACH GROUP MEMBER USING ALL SVIB SCALES WITH SIGNIFICANT LOADINGS ON EACH FACTOR\*

Actual Group Membership	Predicted Group Membership			Total
	Group A	Group B	Group C	
Group A	24	11	9	44
Group B	12	22	5	39
Group C	10	11	27	48

\*This classification is based on a significant difference among the mean values of the discriminant function variables for the three curricula groups ( $p=.01$ ).

The efficiency of classifying the English majors in their respective college curricula groups, based on the method of utilizing only the occupational scale with the highest factor loading value to represent each factor-occupational scale grouping as a discriminant function variable, is shown in Table 5.

The efficiency of correct classification of the English majors who were Group A members (College of Education graduates) was 52.20 per cent. Arts and Sciences students who followed a teaching certification program (Group B) were correctly identified by their discriminant function value at a 48.70 per cent efficiency level. Twenty-eight of the forty-eight students in Group C (Arts and Sciences students who did not follow a teacher certification program)

or 58.30 per cent were correctly identified. A comparison of the combined groups following a teacher education program (Group A and Group B) and those not in a teacher education program (Group C) resulted in a 78.30 per cent correct classification of the former and a 58.30 per cent of the latter. The resulting efficiency of classifying the English majors by their respective college curricula group membership showed a slight decrease in the classification of Group A students (a loss of 2.3 per cent efficiency) compensated by a slight increase in the classification of Group C students (a gain of 2.1 per cent efficiency). It appears that Group C students were the most affected by the second method of discriminant function variable selection and resulted in a loss of 7.7 per cent of classification efficiency.

TABLE 5

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED CURRICULA GROUP MEMBERSHIP FOR THE ENGLISH MAJORS BASED ON THE  $D^2$  VALUE OF EACH MEMBER USING THE SVIB SCALE WITH THE HIGHEST SIGNIFICANT LOADING ON EACH FACTOR\*

Actual Group Membership	Predicted Group Membership			Total
	Group A	Group B	Group C	
Group A	28	10	11	44
Group B	13	19	7	39
Group C	6	12	28	48

\*This classification is based on a significant difference among the mean values of the discriminant function variables for the three curricula groups ( $p=.001$ ).

While the mean values of the discriminant function variables reported for the English majors were found to be significantly different among the three curricula groups when either of the methods of variable selection were used--neither of the two methods of variable selection produced a significant difference among the discriminant function variable means of the curricula groups with foreign language specializations. It has been stated earlier (Johnson, 13) that if the null hypothesis of stating that the samples came from the same population is accepted, then there is nothing to be gained by applying the discriminant function analysis to effect discrimination among the curricula groups of the foreign language majors. The investigation of the discriminative efficiency of the SVIB scores, of the foreign language majors, based on the insignificant difference among the variable mean scores of the three curricula groups, may result in a classification matrix that is a statistical artifact caused by the maximization of minimal mean score differences. However, when the English majors were compared, their  $D^2$  statistic utilized real mean differences for maximizing the differences among the three college curricula groups.

In light of this limitation, the classification efficiency of the SVIB in differentiating between the three college curricula groups for the foreign language majors shall be reported. Both methods of variable selection failed to show a significant difference between the means of the six discriminant function variables at the  $p=.05$  level of confidence. Table 24 and Table 25 of the Appendix, respectively, show the mean values of the discriminant function variables of the three college curricula groups for the foreign language



majors are more homogeneous than the interests of the English majors. If differential vocational interests exist between the foreign language majors, their SVIB scores, based on the  $p$  factor dimension, did not reflect this.

Table 6 shows the degree of classification efficiency achieved when all significantly loading scales per factor-occupational scale grouping were used in selecting the discriminant function variables in predicting the group membership for the foreign language majors.

TABLE 6

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED CURRICULA GROUP MEMBERSHIP FOR THE FOREIGN LANGUAGE MAJORS BASED ON THE  $D^2$  VALUE OF EACH MEMBER USING ALL SVIB SCALES WITH SIGNIFICANT LOADINGS ON EACH FACTOR\*

Actual Group Membership	Predicted Group Membership			Total
	Group A	Group B	Group C	
Group A	4	1	4	9
Group B	4	8	4	16
Group C	5	4	8	17

\*This classification is based on insignificant differences among the mean values of the discriminant function variables for the three curricula groups.

The members of Group A (College of Education majors) were correctly identified at a 44.40 per cent level of efficiency. Eight of the sixteen foreign language majors in Group B (Arts and Sciences students following a teacher certification program), or 50.00 per cent were correctly identified. An efficiency level of 47.00 per cent was attained in placing the Arts and Sciences students who had

not followed a teacher certification program (Group C) in their proper group. A comparison of the combined groups following a teacher education program (Group A and Group B) and those not in a teacher education program (Group C) resulted in a 68.00 per cent correct classification of the former and a 47.00 per cent correct classification of the latter.

The classification efficiency achieved by the method utilizing the occupational scale with the highest factor loading per each factor-occupational scale grouping to represent that factor in the discriminant function analysis of the foreign language majors is shown in Table 7.

TABLE 7

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED CURRICULA GROUP MEMBERSHIP FOR THE FOREIGN LANGUAGE MAJORS BASED ON THE  $D^2$  VALUE OF EACH MEMBER USING THE SVIB SCALE WITH THE HIGHEST SIGNIFICANT LOADING ON EACH FACTOR\*

Actual Group Membership	Predicted Group Membership			Total
	Group A	Group B	Group C	
Group A	3	4	2	9
Group B	6	7	3	16
Group C	5	4	8	17

\*This classification is based on insignificant differences among the mean values of the discriminant function variables for the three curricula groups.

Thirty-three per cent of the Group A students, 43.70 per cent of the Group B students, and 47.00 per cent of the students in Group C were correctly identified. In comparing the efficiency of the two

methods of variable selection it is observed that there was a decrease in both Group A and Group B of 11.10 per cent and 7.00 per cent respectively. The classification efficiency of Group C students was identical for both methods of variable selection. The second method resulted in correctly classifying 80.00 per cent of the combined Group A and Group B students (those students following a teacher certification program); whereas the method of using all significantly loading scales per factor-occupational scale grouping to select the discriminant function variables resulted in correctly classifying only 68.00 per cent of these students.

It can be concluded that both methods of variable selection are equally effective in classifying students in their proper college curricula group membership whether or not there is a significant difference of the mean values of the discriminant function variables. It appears that the first method of using all of the SVIB scales is the most efficient in classifying students into their proper college curricula group, however, the second method of using only six SVIB scales is more efficient in discriminating between students from teacher certification programs and those not following a teacher certification program.

In light of these findings the second method of using a single occupational scale to represent each discriminant function variable will be employed in all group comparisons that follow. Thus Variable I becomes the business education teacher scale, Variable II will be represented by the musician performer scale, Variable III will be designated by the social science teacher scale, Variable IV by the physical therapist scale, Variable V by the English teacher

scale, and the sixth variable will be represented by the engineer scale of the SVIB.

#### Differentiation by Curricula Groups within Subject Fields

The third question of this study was designed to investigate the ability of the SVIB to discriminate between the students in each of the three college curricula groups when the English, foreign language, history, and mathematics subject fields were studied. It was previously stated that 53.43 per cent of the English majors were correctly identified by their actual curricula group membership. The foreign language majors were correctly identified by their curricula groups at an efficiency level of 42.61 per cent. Eighteen of the twenty-eight history majors (or 64.28 per cent) were correctly placed in their proper curricula groups. It was observed that 48.36 per cent of the students with a mathematics major were correctly classified in their proper curricula groups. The overall percentage of placing students, based on their  $D^2$  values, from the English, foreign language, history, and mathematics subject field specializations into their correct college curricula group was 52.15 per cent.

In view of the percentages of correct subject field by college curricula group placements reported above, the following answer is proposed for the third question of this study--'The SVIB effectively discriminated between 52.15 per cent of the students in the three college curricula groups when the English, foreign language, history, and mathematics subject fields were studied.'

The classification efficiency of the six selected SVIB scales, when used in the discriminant function analysis, in predicting

a student's actual curricula group membership for the English majors was 52.20 per cent of the Group A (College of Education graduates) students were correctly identified, 48.70 per cent of the students following a teacher certification program (Group B) were correctly placed, and 58.30 per cent of the students not following a teacher certification program (Group C) were correctly identified (Table 5). It was also reported that 33.00 per cent of the foreign language majors were correctly identified as Group A members, 43.70 per cent were correctly placed in Group B, and 47.00 per cent of the Group C members were placed in their proper group (Table 7).

The difference of the mean value for the discriminant function variables was found not to be significantly different for the history majors (Table 26 in the Appendix). The limitations of classifying students who are members of groups that are not significantly different has previously been discussed. In view of these limitations, the classification matrix for the history majors is shown in Table 8.

The history majors who graduated from the College of Education (Group A) were correctly identified at a 60.00 per cent level of efficiency. Students in Group B (Arts and Sciences students following a teacher certification program) were successfully separated from members of the other groups at a 62.50 per cent level of efficiency. Four of the five history majors who did not follow a teacher certification program were correctly identified. There were twenty-three students following a teacher certification program (Group A and Group B combined) with history as their subject field specialization. Of these twenty-three students, eighteen or 78.20 per cent were correctly identified.

TABLE 8

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED CURRICULA GROUP MEMBERSHIP FOR THE HISTORY MAJORS BASED ON THE  $D^2$  VALUE OF EACH MEMBER\*

Actual Group Membership	Predicted Group Membership			Total
	Group A	Group B	Group C	
Group A	9	3	3	15
Group B	1	5	3	8
Group C	0	1	4	5

\*This classification is based on insignificant differences among the mean values of the discriminant function variables for the three curricula groups.

The difference of the mean values for the discriminant function variables was found not to be significantly different at the .05 level of confidence among the three curricula groups for the mathematics majors. A greater degree of confidence can be placed in the classification matrix for this group than in the history and foreign language groups because the mean value came very close to being significant at the .05 level of confidence (Table 27 in the Appendix). The classification matrix for the mathematics majors is shown in Table 9.

Seventy per cent of the students that graduated from the College of Education (Group A) with mathematics specialization were correctly identified by the discriminant function analysis based on their SVIS scores, 42.85 per cent of the Arts and Sciences students following a teacher certification program (Group B) were correctly placed in the classification matrix, and only 35.71 per cent of the Group C

students (Arts and Sciences students who did not follow a teacher certification program) were correctly identified. A comparison of those following a teacher certification program in mathematics versus those not following a teacher certification program resulted in the correct identification in 58.82 per cent of the teaching certified cases but only 35.71 per cent of those not following a teacher certification program. A majority (61.29 per cent) of the students with a subject field specialization in mathematics had SVIB interests scores that were more in harmony with "teachers" of mathematics than with "non-teachers" of mathematics, irrespective of their actual college curricula membership.

TABLE 9

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED CURRICULA GROUP MEMBERSHIP FOR THE MATHEMATICS MAJORS BASED ON THE  $D^2$  VALUE OF EACH MEMBER\*

Actual Group Membership	Predicted Group Membership			Total
	Group A	Group B	Group C	
Group A	7	0	3	10
Group B	0	3	4	7
Group C	5	4	5	14

\*This classification is based on insignificant differences among the mean values of the discriminant function variables for the three curricula groups.

#### Weighting Coefficients for Discriminant Functions--I

For the researcher who wishes to see the findings of this study, the weighting coefficients that were used to obtain the results

reported in questions two and three of this study are included in Table 10.

TABLE 10  
WEIGHTING COEFFICIENTS THAT WERE REQUIRED FOR EACH  
DISCRIMINANT FUNCTION VARIABLE IN MAXIMIZING  
DIFFERENCES BETWEEN GROUPS\*

Subject Field by Curricula Group	Variables						C**
	I	II	III	IV	V	VI	
English***							
Group A	1.14	.46	-.34	.91	1.10	.72	-99
Group B	1.15	.41	-.34	.98	1.22	.74	-104
Group C	1.13	.40	-.41	.91	1.26	.80	-102
Foreign Language							
Group A	.89	.82	.41	.07	.51	.85	-93
Group B	.90	.82	.30	.14	.60	.82	-92
Group C	.87	.80	.39	.06	.51	.90	-91
History							
Group A	.77	.27	-.15	.31	.89	.58	-66
Group B	.72	.32	.01	.26	.72	.66	-68
Group C	.66	.31	-.05	.24	.74	.69	-64
Mathematics							
Group A	1.07	.66	1.13	.47	.96	.57	-119
Group B	1.08	.80	1.41	.53	.99	.42	-134
Group C	1.05	.71	1.27	.50	1.02	.49	-125

\*The coefficients shown in this table were used to multiply each SVIB occupational scale score that represents the corresponding variable in the discriminant function analysis.

\*\*The letter  $C$  stands for constant and represents the values that are subtracted from the value that has been determined after each persons variable score has been multiplied by the corresponding coefficient and summed across all variables. After subtraction of the  $C$  value the persons  $O^2$  value has been determined.

\*\*\*Only the English majors reached a significance level of .05 or lower regarding the difference of their means on the six discriminant function variables. If prediction equations were to be constructed for the subject field groups--only the English majors should be considered.



The weighting coefficients of each discriminant function variable illustrate the relative significance of each variable in maximizing the differences among the groups being compared within the total discriminant function space (e.g., when the six discriminant function variables are operative at the same time).

Variable I is represented by the SVIE business education teacher scale. The English and mathematics subject field students required higher weighting coefficients for Variable I than did the foreign language and history subject field students. Variable II which represented interests similar to musician performers received higher weightings for the foreign language and mathematics students than for the English and history students.

The third discriminant function variable represents the interests of social science teachers and received the highest weighting for the mathematics majors followed by a minimal degree of weighting required by the foreign language majors. The English majors required a minimal negative weighting on this variable in all three curricula groups (-.15 to -.05). The three curricula groups of the history majors manifest a differential weighting on the third variable. Groups A and C required minimal negative weightings (-.15 and -.05 respectively) while the Group B students required a very minimal positive weighting (.01) on this variable.

The fourth variable in the discriminant function was indicative of not having the interests of physical therapists (e.g., the physical therapist scale loaded -.863 on Factor IV of the Group A vocational interest structure). This variable received a high weighting by the three English curricula groups (an average of .50

for the three curricula groups), history majors (an average of .27 for the three curricula groups), and the foreign language majors (an average weighting coefficient for the three curricula groups equal to .09).

Variable V is represented by the SVIB English teacher scale. The English majors had the highest weighting coefficients on this variable followed by the mathematics, history, and foreign language majors. The sixth variable is characterized by the engineer scale of the SVIB and received the highest weightings from the foreign language majors followed by the English, history, and mathematics majors.

#### Differentiation by Curricula Group

The SVIB correctly identified 47.41 per cent of the 232 students by their actual college curricula group membership. The following answer is proposed for the fourth question of this study--"The efficiency of discrimination achieved by the SVIB was 47.41 per cent correct classification of students who had graduated from three separate college curricula groups when their subject field specializations were ignored." The level of efficiency is only 14.08 per cent better than chance and lends support to Strong's conviction that teachers should be grouped in terms of the things they teach, not with respect to the function of teaching.

This question was concerned with the investigation of possible differential vocational interests patterns that may be manifest in each college curricula group when the same subject fields are represented in each of the groups. The English, foreign language, history,

and mathematics subject fields were "collapsed" within each college curricula group and the comparison resided among the three "collapsed" curricula groups which are more or less those of a manifest interest in teaching versus that of not teaching. The means of the three curricula groups on the six discriminant function variables are significantly different at the .001 level of confidence (Table 28 in the Appendix). Table 11 compares the classification efficiency that was achieved by the discriminant function analysis based on the  $D^2$  value for each of the 232 students involved in the college curricula comparison.

TABLE 11

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED GROUP MEMBERSHIP FOR EACH CURRICULA GROUP BASED ON THE  $D^2$  VALUE OF EACH MEMBER\*

Actual Group Membership	Predicted Group Membership			Total
	Group A	Group B	Group C	
Group A	31	22	25	78
Group B	22	30	18	70
Group C	18	17	49	84

\*This classification is based on a significant difference ( $p=.001$ ) among the mean values of the discriminant function variables for the three groups.

The College of Education graduates (Group A) were correctly placed at the 39.74 per cent level of efficiency and 32.05 per cent of the Group A members were incorrectly placed in Group C (Arts and Sciences students not following a teacher certification program).

The members of Group B (Arts and Sciences students following a teacher certification program) were correctly identified at a 42.86 per cent level of efficiency and 25.71 per cent were placed in Group C. Of the eighty-four students in Group C, forty-nine or 58.33 per cent were correctly identified as Group C members. In comparing those students that followed a teacher certification program with those not following a teacher certification program resulted in a correct delineation in 70.95 per cent of the cases following a teacher certification program and a correct placement of 58.33 per cent of those not following a teacher certification program. The underlying vocational interest structure for the College of Education students, that was delineated in answering the first question of this study, apparently had a better "fit" to those following a teacher certification program (Group A and Group B, and, therefore, acted as a better discriminator between these groups than those students in Group C (Arts and Sciences students not following a teacher certification program).

#### Differentiation by Subject Field

The English, foreign language, history, and mathematics majors were combined by subject field specializations regardless of their college curricula group membership. These mathematics majors are compared with English, foreign language, and history majors respectively and whether they followed a teacher certification program or a non-teacher certification program was disregarded. Inspection of Table 29 (in the Appendix) reveals that there is a significant difference, at the .001 level of confidence, between the means of the

four subject field groups on the six discriminant variables. Table 12 presents the resulting classification matrix based on the application of the discriminant function analysis to the SWB scores of students majoring in four subject fields without attention being directed to their particular college curricula group membership.

TABLE 12

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED GROUP MEMBERSHIP FOR SEPARATE SUBJECT FIELDS BASED ON THE  $D^2$  VALUE OF EACH MEMBER\*

Actual Group Membership	Predicted Group Membership				Total
	1	2	3	4	
1. English	47	26	33	25	131
2. Foreign Language	9	15	10	8	42
3. History	6	2	17	3	28
4. Mathematics	5	4	4	18	31

\*This classification is based on a significant difference ( $p=.001$ ) among the mean values of the discriminant function variables for the four subject field groups.

The efficiency of correctly placing the students and their respective subject fields are as follows: 35.85 per cent of the English majors were correctly placed, 35.71 per cent of the foreign language majors were correctly identified, seventeen of the twenty-eight (60.71 per cent) of the history majors were identified as history majors, and 58.06 per cent of the mathematics majors were correctly identified as such.

The overall percentage of correct identification of students by their actual subject field membership was 41.81 per cent. On the

basis of the reported percentages of correct subject field placement for each of the four subject fields and the overall percentage of correct placement, it is concluded that the SVIB did effectively discriminate between the 232 students who represented four separate subject fields of specialization. An affirmative answer is advanced in reply to the fifth question of this study--"The SVIB effectively discriminated, at an efficiency level of 41.81 per cent, between students who were English, foreign language, history, and mathematics majors when their college curricula group membership was ignored."

#### Differentiation of Secondary and Elementary Majors

Investigation of differential vocational interests of graduates from the College of Education that majored in four separate secondary education subject fields and the students that majored in elementary education revealed a significant difference ( $p=.001$ ) among the means of the five groups on the six discriminant function variables (Table 30 in the Appendix). Table 13 presents the actual group membership versus the predicted group membership classification matrix resulting from the application of the discriminant function analysis to the SVIB scores of these graduates from the College of Education.

It was found that the English majors who graduated from the College of Education could not effectively be separated from the other subject field majors. Only 39.55 per cent of the English majors were correctly identified as English majors. Four of the nine or 44.44 per cent of the foreign language majors were correctly identified as such.

Eight history majors were incorrectly placed resulting in a 46.67 per cent correct classification of this subject field group. The mathematics majors were correctly placed at an efficiency level of 80.00 per cent. The placement of twenty-six elementary students in their proper group resulted in a 50.98 per cent correct classification of the fifty-one students involved. The overall percentage of correct placement for these five groups was 44.96 per cent. These findings resulted in the following answer to the sixth question raised by this study--"The SVIB effectively discriminated between students who had majored in the English, foreign language, history, and mathematics subject fields at the secondary school level of certification and students majoring in elementary education at an efficiency level of 44.96 per cent."

TABLE 13

CLASSIFICATION MATRIX COMPARING THE ACTUAL VERSUS THE PREDICTED GROUP MEMBERSHIP FOR THE SECONDARY AND ELEMENTARY EDUCATION STUDENTS BASED ON THE  $D^2$  VALUE OF EACH MEMBER\*

Actual Group Membership	Predicted Group Membership					Total
	1	2	3	4	5	
1. English	13	11	9	2	9	44
2. Foreign Language	1	4	3	0	1	9
3. History	3	2	7	2	1	15
4. Mathematics	1	0	0	8	1	10
5. Elementary	7	7	6	5	26	51

\*This classification is based on a significant difference ( $p=.001$ ) among the mean values of the discriminant function variables for the five groups.

## Weighting Coefficients for Discriminant Functions--II

For the researcher who wishes to use the findings of this study, the weighting coefficients that were used to obtain the results reported in questions four, five, and six of this study are included in Table 14.

TABLE 14

WEIGHTING COEFFICIENTS THAT WERE REQUIRED FOR EACH DISCRIMINANT FUNCTION VARIABLE IN MAXIMIZING DIFFERENCES BETWEEN GROUPS\*

Comparison Made**	Variables						C
	I	II	III	IV	V	VI	
<u>Curricula Group Only</u>							
Group A	.91	.48	-.06	.54	.94	.64	- 84
Group B	.91	.48	-.04	.57	.95	.66	- 89
Group C	.89	.45	-.09	.53	.99	.71	- 87
<u>Subject Fields Only</u>							
English	.95	.49	-.10	.54	.97	.72	- 88
Foreign Lang.	.97	.54	-.07	.54	.97	.77	- 95
History	.92	.48	-.00	.49	.91	.75	- 88
Mathematics	1.01	.48	-.12	.52	.96	.84	- 95
<u>Secondary and Elementary</u>							
English	.96	.41	-.09	.61	1.08	.79	- 92
Foreign Lang.	.97	.43	-.09	.59	1.09	.86	-100
History	.96	.34	-.05	.61	1.14	.81	- 94
Mathematics	1.07	.37	-.12	.61	1.01	1.02	-103
Elementary	.99	.38	-.09	.65	1.03	.77	- 91

\*For an explanation of the use of these weighting coefficients the reader is referred to the first two footnotes of Table 10.

\*\*All comparison groups reached a .001 level of confidence regarding the differences of their mean values on the six discriminant function variables, therefore prediction equations based on these weightings could be constructed.

The weighting coefficients of each discriminant function variable illustrate the relative significance of each variable in



maximizing the differences among the groups being compared within the total discriminant function space (e.g., when the six discriminant function variables are operative at the same time). For example, when three groups are being compared on six discriminant function variables, there will be eighteen weighting coefficients assigned. Three weightings for each of the six variables are needed to separate the three groups under investigation.

Variable I received high weighting coefficients for the comparisons involving students grouped by their college curricula, by their subject fields only, and in relation to the level of certification in Group A (secondary versus elementary majors). Variable II generally received moderate weighting for the three comparisons made.

The third variable received minimal negative weightings for the maximization of between group differences in each of the three comparisons made. The fourth variable received moderate weightings that were very similar to the weightings required by Variable II for the first and second comparisons made (e.g., students grouped by college curricula only and students grouped by subject field only). The third comparison made of secondary versus elementary students indicated that though the required weightings were moderate and indicative of the other Variable IV weightings--they were considerably larger than the weightings required by the second variable in maximizing the differences between the secondary and elementary majors.

Variable V received high weightings for each of the comparisons made and illustrates the relative importance of this variable in the discriminant function space for maximizing between group differences. The sixth variable received an increasing magnitude of

weightings as the respective comparisons were made between the curricula groups only, the subject field groups only, and finally the secondary versus the elementary education majors.

#### Summary

The discriminative power of the Strong Vocational Interest Blank for Women was investigated relative to its ability in distinguishing between the vocational interests of 333 females who had graduated with different subject field specializations and from three separate college curriculums. Six guiding questions were studied and answered by applying the factor analysis and discriminant function analytic methods.

Analysis of the thirty SVIB occupational scores for 196 College of Education graduates with varying subject field specializations at the secondary level in conjunction with elementary education majors revealed that six factors effectively (e g., they accounted for 85.59 per cent of the total inter-scale variance) delineated the underlying vocational interest structure of this group. The first method utilized all of the occupational scales that had significant loadings on each of the factors; whereas the second method utilized the occupational scale that had the highest factor loading per factor. Both methods were cross validated and were found to be equally effective in predicting a students group membership. Therefore, a decision was made to use the more "practical" method of employing the SVIB scale with the highest factor loading to represent each discriminant function variable which lends itself to situations requiring efficiency and expediency.

Students were grouped by their subject field majors and comparisons were made between the three college curricula groups appearing in each subject field. Only the English subject field majors showed a significant difference between the means of the six discriminant function variables for the three curricula groups. The mean values of the six discriminant function variables for the foreign language, history, and mathematics majors were not found to be significantly different at the three levels of the college curricula variable; however, the overall prediction of the correct college curricula group for all four subject fields was at the 52.85 per cent level of efficiency.

The students were then grouped by their college curricula membership and the subject field of specialization was ignored. It was found that the SVIB correctly placed 47.41 per cent of the 232 students into their respective college curricula groups. The students in each subject field were then combined by disregarding their college curricula membership. The SVIB effectively placed ninety-seven of the 232 students (or 41.81 per cent, in their correct subject field (e.g., English, foreign language, history, and mathematics). The SVIB correctly classified the secondary subject majors and elementary majors at a 44.95 per cent level of efficiency.

## CHAPTER V

### SUMMARY, RESULTS, CONCLUSIONS, AND IMPLICATIONS

#### Summary

It was the purpose of this study to investigate the degree of discrimination that could be achieved by the SVIB when females were grouped by their undergraduate subject field specializations and their college curricula group membership. The sample group consisted of 333 graduates from the University of Florida who had completed the SVIB during their freshman year as part of their orientation testing program requirements. Specifically, the study was designed to answer the following questions:

1. What is the underlying SVIB vocational interest structure of females that have graduated from the College of Education with elementary or secondary certification?
2. Will the efficiency of predicting a student's membership in a group, as determined by the independent variables, be seriously altered when a single occupational scale is used to represent each factor-occupational scale grouping, rather than utilizing all of the occupational scales that are

assigned to each factor in the female vocational interest structure of the College of Education graduates?

3. How efficiently will the SVIB discriminate between students who have graduated with the same subject field specialization but from different college curricula?
4. How efficiently will the SVIB discriminate between students from the three college curricula groups when the subject fields are ignored?
5. How efficiently will the SVIB discriminate between graduates from different subject field specializations when their college curricula groupings are ignored?
6. How efficiently will the SVIB discriminate between elementary and secondary education majors?

The impetus for this study grew out of the researcher's experience in working with females involved in career decision-making processes and an examination of the literature which suggested the need for research concerned with the female form of the SVIB. The data were organized to make possible the use of the factor analysis and discriminant function analytical methods.

#### Results

Each of the questions asked in this study was subjected to statistical interpretation. On the basis of the findings found from

the statistical treatment of the data, the following results were obtained:

1. Six bipolar factors effectively traced the underlying vocational interest structure of the female graduates from the College of Education. The resulting factor-occupational scale groups indicated that these students were more similar to females actively engaged in vocations described as clerical and culinary, musical, feminine, people-oriented, adult persuasive, literary, and professional sciences; as contrasted with the interests of females engaged in professional, technical and scientific, and health related vocations.
2. The method of selecting variables to be used in the discriminant function analysis, of SVIB scores among students who have a common subject field interest but have graduated from different college curricula, can be made with approximately the same level of efficiency when the SVIB occupational scale with the highest factor loading, rather than all assigned occupational scales, is used to represent each variable.
3. The SVIB effectively discriminated among students who were members of the three college curricula groups for the English, foreign language, history, and mathematics subject field majors with an overall

52.85 per cent level of efficiency.

- (a) The English majors were correctly assigned to their respective college curricula groups at a 53.00 per cent level of efficiency.
- (b) The foreign language majors were correctly assigned to their actual college curricula groups at a 41.30 per cent level of efficiency.
- (c) A 67.00 per cent level of efficiency was attained in assigning the history majors to their correct college curricula groups.
- (d) Students with a mathematics subject field specialization were correctly assigned to their respective college curricula groups at a 49.52 per cent level of efficiency.

4. The SVIB successfully discriminated among students who were members of the three college curricula groups, although their subject field specializations of English, foreign languages, history, and mathematics were ignored, at a 47.41 per cent level of efficiency.

- (a) College of Education students (Group A) were correctly placed at a 39.74 level of efficiency.

- (b) A 42.86 per cent level of efficiency was achieved in placing the Arts and Sciences graduates who had followed a teacher education program (Group B) in their correct college curricula group.
  - (c) Students who were members of Group C (Arts and Sciences graduates who did not follow a teacher education program) were correctly identified at a 58.33 per cent level of efficiency.
5. When students were grouped by their subject field specializations in English, foreign languages, history, or mathematics and their particular college curricula memberships were ignored--the SVIS correctly identified the actual subject field majors of these students at a 41.81 per cent level of efficiency.
- (a) The English majors were correctly separated from the other subject field majors at a 35.88 per cent level of efficiency.
  - (b) Students with subject field specializations in foreign languages were correctly placed in their actual subject field group at a 35.71 per cent level of efficiency.



- (c) A 80.71 per cent level of efficiency was attained in correctly identifying students with a history subject field specialization.
  - (d) Mathematics majors were correctly identified at a 38.06 per cent level of efficiency.
6. Secondary education students with English, foreign language, history, or mathematics subject field specializations and elementary education majors were successfully assigned to their respective groups by the SVIB at a 44.96 per cent level of efficiency.
- (a) Secondary education students with an English subject field specialization were correctly distinguished from the other education students at a 29.55 per cent level of efficiency.
  - (b) A 46.44 per cent level of efficiency was achieved by the SVIB in correctly assigning four of the nine College of Education foreign language majors to their proper group.
  - (c) History majors were correctly separated from the other education students with a 46.67 per cent efficiency of discrimination.

- (d) Eight of the ten education students who were mathematics majors were correctly placed, resulting in a discrimination level of efficiency of 80.00 per cent.
- (e) The elementary education majors were correctly separated from the secondary subject field majors at a 50.98 per cent level of efficiency.

#### Conclusions

The results of the investigations that have been conducted in this study have been reported and discussed. On the basis of these results certain conclusions seem warranted.

1. The SVIB does discriminate among female students who followed a teacher preparation program and those who did not follow a teacher preparation program. This indicates that the vocational interests of students preparing to teach are different, and distinguishable, from students who did not prepare for the teaching profession. Implicitly this conclusion indicates that students with a "common" subject field interest, manifest acceptance or rejection of a "teaching role" and, perhaps, a person's vocational interests during the freshmen year of college is one of the major determinants involved in the decision to enroll or not enroll in a teacher preparation program.

2. Women graduates from different subject fields manifest interests that serve as a basis of differentiation. The SVIB scores

of students from varying subject fields were significantly different and indicate that these interests may be one of the determinants that is active during a student's selection of a vocation.

3. The SVIB does differentiate among the vocational interests of students in the College of Education who majored in varying subject fields of secondary education or elementary education. This suggests that differential vocational interests are operative, and distinguishable, among students preparing for the teaching profession.

4. The interests of foreign language and history majors are more subject field oriented than teaching or college curriculum oriented, while the interests of English and mathematics majors are both subject field oriented and teaching or college curriculum oriented.

#### Implications

While the findings of this study are limited by the size and scope of the sample group that was investigated, the results, however, support the use of the Strong Vocational Interest Blank for Women as an effective discriminator of female graduates from different subject fields of specialization and from three college curricula. Counselors working with female students involved in decisions regarding their selection of a subject field specialization and/or decisions related to teacher preparation programs, may use the results of this study in comparing the student's vocational interests with graduates from the various groups investigated by this study. The degree of similarity that exists between the vocational interests of females involved in vocational decision making and female graduates

from different curricula programs, may be ascertained by the utilization of likelihood equations based on the findings of this study. This study raises many questions which have implications regarding the usefulness and adaptability of these findings to females involved in making vocational decisions.

The stability of SVIB occupational scores after graduation and vocational exposure would have a direct bearing on the findings of this study. The "shift" of SVIB occupational scores for graduates in the teaching certified groups may be compensated by comparable changes in the occupational scores of graduates from the non-teaching certified groups. A drastic "drift" of interest patterns for females in the College of Education group would effect a change in the underlying vocational interest structure that served as a reference base in this study.

Another question raised by this study is directly concerned with the implementation of the findings. The writer is confronted with the following question--If the findings of this study were available to, and implemented by, counselors when these students were freshmen in college, would the resulting distribution of subject fields and college curricula for these students at the time of graduation remain the same or would it have been altered? Seemingly, this question is asking whether the use of the SVIB in situations requiring students to make curriculum decisions would have the "impact" to alter student decisions that may be based on past successful and/or enjoyable experiences with a particular subject field. The answer to this question would entail additional research employing the findings of this study with one group of students and allowing a

second group to choose their college majors without the use of the SVIB. This design would serve as a validation of the actual predictive validity of the SVIB based on the findings of this study.

Are the graduates from the teacher education programs included in this study actually engaged in vocations for which they prepared? The explicit purpose of this question is to ascertain the present vocations of the sample group members and, implicitly, gain insight relative to their satisfaction or dissatisfaction with, and anticipated changes of, their present vocations. This question has as its criterion--satisfaction with a vocation after graduation from college. Since this study involved females only, an effort should be made to follow-up this sample at a later date when the period of child rearing has been accomplished by most of the subjects.

The realism of female vocational choice, based on the use of interest inventories, is difficult to ascertain. A definite limitation of this study is that only graduates from one university were studied. Also, the sociological backgrounds, parental influences, subject field interest, and psychological pressures of each student used in this study were not controlled, and, therefore, had random effects that were not accounted for.

In order to adequately corroborate the conclusions drawn from the present study, more research involving the Strong Vocational Interest Blank for Women is needed. Follow-up studies of female college "drop-outs" and graduates after employment has begun are needed for further validation of the SVIB. Research studies using larger samples of females from different geographical areas would also be desirable.

## APPENDIX

## TABLE 1a

AMERICAN WOMEN MARCH OF 1917 - 1918  
OF THE COLLEGE OF EDUCATION, UNIVERSITY OF CALIFORNIA

STUDENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
3	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
13	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
15	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
16	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
17	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
18	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
19	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
22	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
23	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
26	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
27	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
28	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
29	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

(For key to symbols see table  
on page 10)

- |         |         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. ...  | 2. ...  | 3. ...  | 4. ...  | 5. ...  | 6. ...  | 7. ...  | 8. ...  |
| 9. ...  | 10. ... | 11. ... | 12. ... | 13. ... | 14. ... | 15. ... | 16. ... |
| 17. ... | 18. ... | 19. ... | 20. ... | 21. ... | 22. ... | 23. ... | 24. ... |
| 25. ... | 26. ... | 27. ... | 28. ... | 29. ... | 30. ... | 31. ... | 32. ... |

TABLE 16  
 FACTOR LOADINGS FROM THE STRONG VOCATIONAL  
 INTEREST BLANK FOR WOMEN  
 (N=178 College of Education graduates)

Occupational Scales	Factor					
	I	II	III	IV	V	VI
Artist	-.823*	-.017	-.344	.085	-.320	-.065
Author	-.853*	.132	-.093	.363	-.146	-.142
Librarian	-.697*	-.198	-.115	.265	-.461	-.059
English Teacher	-.458	.444	.473	.156	-.467**	.015
Social Worker (Rev.)	-.026	.891	.799*	-.044	.235	-.133
Psychologist	-.635*	-.088	.443	-.043	.093	.492
Lawyer	-.324	.018	.418	.559*	.276	.475
Social Science Teacher	-.110	.125	.894**	-.012	-.283	.040
Y.W.C.A. Secretary	.063	.183	.575*	-.221	.071	.025
Life Insur. Saleswoman	.099	.123	.299	.702*	.432	-.000
Buyer	.645*	.053	-.181	.488	.241	-.246
Housewife	.815*	.061	.008	-.330	-.162	-.279
Elementary Teacher	.588*	.347	.301	-.410	-.308	-.300
Office Worker	.610*	-.104	-.312	.033	-.096	-.036
Stenog.-Secy.	.743*	.334	-.291	.244	.070	-.070
Business Ed. Teacher	.844**	.053	.022	.073	-.094	.081
Home Econ. Teacher	.735*	-.010	.168	-.485	-.120	-.150
Dietitian	.742*	-.253	-.094	-.345	.073	-.048
Phys. Ed. Teacher (Coll.)	.119	.051	.478	-.525*	.100	.402
Occup. Therapist	.189	.128	.106	-.844*	.009	-.000
Nurse	.104	-.144	.148	-.8.9*	.075	-.123
Math.-Science Teacher	.344	-.412	-.014	-.512	-.421	.461*
Dentist	-.336	-.591*	-.273	-.484	-.198	.241
Laboratory Technician	-.146	-.549*	-.443	-.54.	-.184	.482
Physician	-.749*	-.442	-.091	-.287	-.056	.193
Musician Teacher	.206	.804*	.339	.027	-.055	-.128
Musician Performer	-.156	.923**	.034	.060	.004	.031
Physical Therapist	.100	-.126	.171	-.863**	.182	.203
Engineer	-.097	-.256	-.059	-.153	-.058	.868**
Femininity-Masculinity	.043	.644*	.241	-.119	.013	-.439

\*The occupational scale has been subsumed under the factor number appearing at the top of this column.

\*\*This occupational scale was used to represent the factor number appearing at the top of this column in the discriminant analyses of this study.



TABLE 17

MEANS AND STANDARD DEVIATIONS FOR THE ENGLISH  
SUBGROUPS USED IN THIS STUDY

Occupational Scales	Group A		Group B		Group C	
	N=44		N=39		N=48	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
1 Artist	29.0	8.4	28.1	8.8	32.2	8.0
2 Author	30.7	8.7	28.4	9.5	33.3	9.4
3 Librarian	21.5	9.3	22.6	9.7	29.3	11.1
4. English Teacher	30.3	11.2	29.9	15.9	31.5	16.3
5 Social Worker (Rev.)	29.2	9.0	33.3	10.4	31.7	9.2
6. Psychologist	23.2	8.2	25.5	11.6	27.4	11.0
7. Lawyer	28.0	9.3	28.1	10.1	30.5	8.8
8 Social Science Teacher	26.8	12.2	29.2	11.1	23.9	11.6
9. Y.W.C.A. Secretary	13.0	9.9	15.5	10.3	12.6	8.6
10. Life Insur. Saleswoman	20.7	8.7	18.0	8.8	18.3	8.9
11 Buyer	26.2	10.2	22.5	9.5	21.3	8.1
12 Housewife	34.7	8.8	35.6	8.5	31.4	8.6
13 Elementary Teacher	32.2	8.9	34.2	10.4	28.0	10.1
14 Office Worker	35.2	5.5	34.9	7.9	33.8	6.8
15 Stenog.-Secy.	39.3	9.9	37.3	8.6	37.7	9.9
16 Business Ed. Teacher	39.1	8.8	29.0	10.6	24.8	10.2
17. Home Econ. Teacher	22.6	11.1	26.1	12.0	17.9	11.6
18 Dietitian	22.5	8.1	25.7	9.8	21.5	10.1
19 Phys. Ed Teacher (Coll.)	20.0	8.0	25.2	10.9	21.3	8.9
20 Occup Therapist	22.1	9.0	26.8	10.0	23.8	10.4
21 Nurse	19.4	8.7	25.8	10.6	20.0	9.3
22 Math -Science Teacher	17.7	10.3	25.6	11.4	21.1	12.8
23 Dentist	17.6	11.3	21.8	10.1	23.4	8.5
24 Laboratory Technician	18.8	12.2	23.8	11.5	25.7	10.5
25 Physician	20.7	12.4	23.5	11.0	25.0	10.1
26 Musician Teacher	31.3	14.5	29.5	11.7	23.9	10.4
27. Musician Performer	34.5	8.4	31.5	9.2	32.6	9.2
28. Physical Therapist	28.6	9.0	31.8	10.4	27.9	8.4
29 Engineer	17.1	8.8	21.1	12.0	24.8	8.8
30 Femininity-Masculinity	53.0	10.5	64.8	9.4	50.4	7.7

TABLE 18

MEANS AND STANDARD DEVIATIONS FOR THE FOREIGN LANGUAGE  
SUBGROUPS USED IN THIS STUDY

Occupational Scales	Group A		Group B		Group C	
	N=4		N=16		N=17	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. Artist	27.4	7.4	26.5	8.6	30.8	8.9
2. Author	28.8	10.9	27.8	9.4	31.5	10.9
3. Librarian	20.2	9.9	23.1	11.6	29.1	13.2
4. English Teacher	35.6	11.8	31.4	11.5	32.5	17.0
5. Social Worker (Rev.)	24.8	8.9	33.3	8.2	30.2	10.9
6. Psychologist	24.4	11.6	21.2	10.1	23.4	11.0
7. Lawyer	20.4	12.1	27.8	7.8	32.7	11.0
8. Social Science Teacher	32.2	8.2	28.2	8.7	29.4	12.9
9. Y.W.C.A. Secretary	16.5	8.7	14.9	8.8	12.6	9.0
10. Life Insur. Saleswoman	21.2	7.0	19.8	8.8	20.2	12.1
11. Buyer	24.6	7.3	23.4	8.3	21.8	10.7
12. Housewife	35.5	10.4	36.5	10.3	34.0	7.8
13. Elementary Teacher	37.2	13.3	34.0	9.4	30.1	7.9
14. Office Worker	35.6	5.0	36.2	6.4	35.8	7.2
15. Stenog.-Secy.	39.2	4.3	41.1	5.7	39.7	6.7
16. Business Ed. Teacher	29.7	7.3	29.6	6.7	27.1	8.9
17. Home Econ. Teacher	24.5	18.6	25.1	10.2	17.1	10.8
18. Dietitian	20.1	7.9	20.8	7.2	21.5	7.9
19. Phys. Ed. Teacher (Coll.)	24.3	7.0	23.3	10.0	23.5	13.9
20. Occup. Therapist	22.5	10.9	29.3	9.7	22.4	10.9
21. Nurse	19.5	11.4	23.4	12.2	23.2	11.2
22. Math.-Science Teacher	23.1	8.5	20.1	8.8	23.5	14.5
23. Dentist	19.8	7.9	19.5	7.7	23.5	12.2
24. Laboratory Technician	17.8	7.1	22.8	8.9	24.8	14.7
25. Physician	18.5	9.7	18.8	9.4	24.9	11.4
26. Musician Teacher	34.6	13.3	31.0	9.5	28.5	14.2
27. Musician Performer	35.3	7.9	37.1	7.5	33.0	11.0
28. Physical Therapist	27.3	6.9	32.4	10.2	30.1	14.7
29. Engineer	20.8	8.2	23.2	9.0	26.8	13.3
30. Femicinity-Masculinity	54.7	11.0	54.1	9.8	51.1	8.4

TABLE 19  
 MEANS AND STANDARD DEVIATIONS FOR THE HISTORY  
 SUBGROUPS USED IN THIS STUDY

Occupational Scales	Group A		Group B		Group C	
	N=16		N=8		N=5	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. Artist	26.1	9.6	30.1	9.2	31.8	5.6
2. Author	29.2	11.6	31.5	8.6	34.8	3.6
3. Librarian	24.2	9.6	30.6	14.0	31.8	4.2
4. English Teacher	34.8	13.6	32.5	17.1	30.6	10.1
5. Social Worker (Rev.)	35.8	8.7	35.6	11.7	33.8	4.7
6. Psychologist	25.7	6.1	24.1	10.3	33.8	8.2
7. Lawyer	32.5	9.6	26.8	10.4	44.0	8.1
8. Social Science Teacher	32.6	8.7	37.2	15.5	30.4	10.5
9. Y.W.C.A. Secretary	16.4	8.6	16.7	11.4	14.6	6.2
10. Life Insur. Saleswoman	24.4	9.7	22.5	6.9	26.4	8.0
11. Buyer	25.6	9.3	23.0	9.6	19.6	9.1
12. Housewife	33.7	7.9	32.8	4.6	25.0	3.4
13. Elementary Teacher	32.4	10.7	30.0	7.7	18.8	4.9
14. Office Worker	34.0	8.2	34.5	7.3	31.6	3.2
15. Stenog -Secy.	37.6	4.4	36.1	7.4	37.6	2.4
16. Business Ed. Teacher	28.2	9.5	28.0	9.0	21.4	5.6
17. Home Econ. Teacher	16.7	14.6	19.8	9.6	8.6	8.2
18. Dietitian	21.0	11.6	22.7	7.6	15.0	4.5
19. Phys. Ed. Teacher (Coll.)	26.2	9.9	22.6	10.8	19.0	7.9
20. Occup. Therapist	20.6	11.9	15.8	10.8	15.6	2.8
21. Nurse	25.0	13.6	16.6	7.3	16.6	2.8
22. Math.-Science Teacher	20.6	13.8	25.5	9.0	16.8	12.7
23. Dentist	20.3	8.5	20.3	7.6	24.0	7.6
24. Laboratory Technician	19.0	10.0	20.5	9.7	25.8	12.8
25. Physicians	23.0	8.5	25.2	11.0	28.0	8.6
26. Musician Teacher	28.0	10.0	27.7	13.3	14.6	8.6
27. Musician Performer	30.4	6.6	29.7	10.2	29.0	7.5
28. Physical Therapist	28.2	11.0	27.8	10.5	23.8	4.2
29. Engineer	19.0	10.3	25.7	8.2	29.4	10.4
30. Femininity-Masculinity	49.8	10.3	49.3	7.8	44.0	4.6

TABLE 20

MEANS AND STANDARD DEVIATIONS FOR THE MATHEMATICS  
SUBGROUPS USED IN THIS STUDY

Occupational Scales	Group A N=10		Group B N=7		Group C N=14	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. Artist	26.1	8.3	30.2	6.3	32.8	10.1
2. Author	20.6	9.5	27.2	8.1	27.3	8.7
3. Librarian	17.8	9.3	24.9	8.7	31.1	12.3
4. English Teacher	12.9	8.6	27.7	6.1	46.0	15.5
5. Social Worker (Rev.)	20.8	6.8	36.2	6.6	23.8	11.5
6. Psychologist	18.0	7.4	20.7	7.9	22.2	13.2
7. Lawyer	23.9	7.7	23.2	11.2	20.4	8.9
8. Social Science Teacher	18.7	6.6	26.8	5.7	25.0	6.9
9. Y.W.C.A. Secretary	7.0	6.7	10.3	3.4	10.6	8.6
10. Life Insur. Saleswoman	13.4	7.5	9.1	8.2	9.3	9.5
11. Buyer	27.4	9.2	17.0	5.6	19.8	11.9
12. Housewife	40.7	8.0	35.0	8.5	37.7	7.9
13. Elementary Teacher	32.3	6.6	34.1	7.5	33.5	6.8
14. Office Worker	43.6	7.1	38.7	7.0	39.2	7.9
15. Stenog.-Secy.	39.1	5.3	37.8	5.2	36.4	6.4
16. Business Ed. Teacher	36.3	12.0	31.8	11.4	29.0	7.9
17. Home Econ. Teacher	33.9	9.7	28.0	9.1	27.0	8.4
18. Dietitian	33.5	8.3	25.0	8.5	26.7	9.1
19. Phys. Ed. Teacher (Coll.)	24.8	6.1	23.2	10.3	24.2	12.4
20. Occup. Therapist	25.9	8.9	28.1	13.7	27.3	9.4
21. Nurse	35.2	8.4	24.4	11.4	23.8	6.7
22. Math.-Science Teacher	41.3	11.1	34.0	11.1	38.3	11.4
23. Dentist	29.0	6.6	25.7	8.0	31.6	10.8
24. Laboratory Technician	32.6	7.3	29.0	7.8	34.2	10.6
25. Physician	24.3	7.4	24.2	9.2	28.4	12.0
26. Musician Teacher	33.8	8.8	30.6	8.8	24.2	11.4
27. Musician Performer	25.8	9.9	33.8	6.0	38.2	9.4
28. Physical Therapist	34.5	7.3	31.5	11.0	32.3	10.8
29. Engineer	34.8	8.2	27.8	6.9	31.0	9.8
30. Femininity-Masculinity	38.2	7.6	49.2	6.6	46.0	9.6

TABLE 21

MEANS AND STANDARD DEVIATIONS FOR THE ADDITIONAL SUBGROUPS  
USED IN THE FACTOR ANALYSIS OF THE GROUP A  
VOCATIONAL INTEREST STRUCTURE

Occupational Scales	Biology		Business Education		Political Science	
	N=5		N=20		N=5	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. Artist	35.4	5.9	25.7	11.2	19.4	7.4
2. Author	32.0	6.1	25.6	11.9	20.6	9.0
3. Librarian	30.2	13.5	24.7	14.3	23.2	10.7
4. English Teacher	32.2	8.6	17.0	15.6	30.2	13.2
5. Social Worker (Rev.)	29.6	11.1	24.9	11.8	36.8	12.0
6. Psychologist	28.4	10.2	14.9	10.8	24.0	6.2
7. Lawyer	20.0	6.6	27.5	10.9	34.0	4.1
8. Social Science Teacher	27.2	5.3	19.8	10.6	37.0	9.7
9. Y.W.C.A. Secretary	13.8	7.3	8.9	9.9	21.2	7.4
10. Life Insur. Saleswoman	6.3	11.9	19.2	8.3	28.0	10.7
11. Buyer	12.2	9.2	29.9	11.6	24.2	8.3
12. Housewife	33.2	9.0	38.6	8.6	35.2	5.6
13. Elementary Teacher	32.6	5.0	31.0	9.1	32.8	10.6
14. Office Worker	30.2	3.7	41.6	8.2	38.6	6.0
15. Stenogr.-Secy	30.4	5.5	43.6	6.7	41.4	5.3
16. Business Ed. Teacher	21.6	3.5	34.7	12.3	35.0	6.0
17. Home Econ. Teacher	24.0	6.5	23.9	12.3	27.4	12.0
18. Dietitian	22.2	4.2	27.0	10.1	26.0	7.3
19. Phys. Ed. Teacher (Coll.)	31.4	6.1	19.1	11.1	26.2	11.6
20. Occup. Therapist	30.4	12.2	21.7	11.5	25.2	9.7
21. Nurse	29.6	11.0	24.1	8.6	27.0	6.2
22. Math.-Science Teacher	33.4	17.5	23.7	9.8	27.2	13.8
23. Dentist	32.6	12.5	19.0	10.0	16.8	7.2
24. Laboratory Technician	33.6	12.5	24.7	9.9	20.0	9.8
25. Physician	35.6	10.5	19.5	11.9	16.8	8.1
26. Musician Teacher	18.4	9.4	24.5	11.4	19.0	11.7
27. Musician Performer	24.2	6.4	30.2	8.5	23.0	7.6
28. Physical Therapist	41.4	9.9	29.9	10.8	33.6	11.0
29. Engineer	26.0	13.4	20.7	7.5	25.8	11.4
30. Femininity-Masculinity	44.2	5.6	50.5	8.7	46.4	5.7

TABLE 21 (Continued)

	Sociology		Speech Therapy		Elementary Education		Group A (Combined)	
	N=7		N=13		N=51		N=179	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1.	24.4	6.4	26.6	10.2	25.4	8.0	28.7	9.0
2.	26.0	7.2	28.7	8.6	24.3	6.6	26.9	8.6
3.	19.2	6.8	18.9	9.6	18.6	8.9	20.5	10.4
4.	27.5	12.8	21.8	7.6	21.5	13.6	25.3	14.0
5.	35.4	8.2	33.0	6.6	31.5	7.0	31.4	8.5
6.	26.1	8.4	20.0	8.6	16.2	7.8	20.4	9.5
7.	36.5	10.4	28.4	6.0	21.8	7.8	27.0	10.0
8.	31.5	8.4	24.0	7.6	24.2	9.3	25.8	10.7
9.	19.5	9.1	13.5	9.1	12.4	8.1	13.0	8.3
10.	23.1	10.6	21.3	8.4	16.6	8.5	19.1	9.5
11.	24.4	7.3	30.0	10.8	28.3	8.9	26.8	10.1
12.	34.4	5.0	37.5	6.2	41.6	6.2	37.6	7.7
13.	32.4	5.8	33.6	8.2	38.8	7.6	34.3	9.3
14.	37.4	3.5	35.2	8.8	40.0	5.7	37.7	6.9
15.	39.8	6.6	38.0	7.0	41.2	5.9	39.9	6.6
16.	31.5	10.1	27.1	11.0	33.1	8.1	31.1	9.9
17.	22.5	10.0	26.2	8.8	29.4	9.0	25.6	11.7
18.	23.5	7.5	26.5	6.8	28.3	7.1	25.4	8.9
19.	24.2	10.4	18.6	9.9	23.0	8.7	22.4	8.5
20.	21.1	7.9	21.6	9.1	26.1	10.7	23.5	10.6
21.	21.2	9.1	22.1	8.2	29.7	11.0	23.3	10.7
22.	23.1	11.8	17.1	7.7	23.3	9.9	22.7	12.2
23.	19.1	10.6	17.6	8.2	20.3	8.6	19.8	10.4
24.	20.9	12.2	19.2	7.4	21.5	9.3	21.6	11.0
25.	21.4	11.8	21.6	12.0	17.6	8.2	20.4	11.1
26.	27.5	10.7	30.5	8.7	30.2	10.4	28.8	12.2
27.	32.2	8.5	31.1	6.9	30.1	8.8	31.1	8.9
28.	30.1	9.9	27.9	7.5	31.2	9.3	29.7	9.8
29.	23.2	13.2	17.3	10.6	17.5	8.6	19.7	10.3
30.	50.4	5.2	53.7	9.0	51.9	8.6	50.9	9.8

TABLE 24

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION VARIABLE FOR THE ENGLISH MAJORS COMPARED BY CURRICULA USING THE SELECTED SVIB SCALE WITH THE HIGHEST SIGNIFICANT LOADING ON EACH FACTOR\*

Comparison Groups	Variable					
	1	2	3	4	5	6
Group A (N=44)	49.98	52.61	49.90	47.00	51.11	45.30
Group B (N=39)	49.92	49.41	52.18	52.12	50.85	48.98
Group C (N=48)	45.65	50.56	47.50	48.22	51.90	52.47

\*A Chi-square value of 37.50 with twelve degrees of freedom indicates a significant difference ( $p=.001$ ) between the means of the three groups.

TABLE 23

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION VARIABLE FOR THE ENGLISH MAJORS COMPARED BY CURRICULA USING ALL OF THE SVIB SCALES WITH SIGNIFICANT LOADINGS ON EACH FACTOR\*

Comparison Groups	Variable					
	1	2	3	4	5	6
Group A (N=44)	48.70	51.42	50.35	47.27	51.11	44.85
Group B (N=39)	49.35	51.29	52.42	52.38	50.85	49.48
Group C (N=48)	47.06	49.25	48.76	48.39	51.90	51.64

\*A Chi-square value of 29.55 with twelve degrees of freedom indicates a significant difference ( $p=.01$ ) between the means of the three groups.

TABLE 24

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION  
VARIABLE FOR THE FOREIGN LANGUAGE MAJORS BY CURRICULA  
USING ALL OF THE SVIB SCALES WITH SIGNIFICANT  
LOADINGS ON EACH FACTOR\*

Comparison Groups	Variable					
	1	2	3	4	5	6
Group A (N= 9)	47.85	54.06	54.33	48.94	54.67	48.77
Group B (N=16)	49.80	54.60	51.06	53.68	51.83	50.08
Group C (N=17)	48.85	51.87	50.19	51.11	52.56	53.56

\*A Chi-square value of 6.45 with twelve degrees of freedom does not support the hypothesis that there is a significant difference ( $p=.05$ ) between the means of the three groups.

TABLE 25

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION  
VARIABLE FOR THE FOREIGN LANGUAGE MAJORS BY CURRICULA  
USING THE SELECTED SVIB SCALE WITH THE HIGHEST  
SIGNIFICANT LOADING ON EACH FACTOR\*

Comparison Groups	Variable					
	1	2	3	4	5	6
Group A (N= 9)	50.63	54.56	54.82	47.64	54.67	48.71
Group B (N=16)	50.48	53.51	49.51	52.68	51.83	50.88
Group C (N=17)	47.94	51.88	52.38	50.39	52.56	54.22

\*A Chi-square value of 7.42 with twelve degrees of freedom does not support the hypothesis that there is a significant difference ( $p=.05$ ) between the means of the three groups.



TABLE 26

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION  
VARIABLE FOR THE HISTORY MAJORS COMPARED BY CURRICULA  
USING THE SELECTED SVIB SCALE WITH THE HIGHEST  
SIGNIFICANT LOADING ON EACH FACTOR\*

Comparison Groups	Variable					
	1	2	3	4	5	6
Group A (N=44)	49.04	48.19	55.23	48.50	54.13	47.03
Group B (N= 8)	48.83	47.49	59.29	48.18	52.54	53.18
Group C (N= 5)	42.16	46.68	53.20	44.15	51.27	56.94

\*A Chi-square value of 13.38 with twelve degrees of freedom does not support the hypothesis that there is a significant difference ( $p=.05$ ), between the means of the three groups.

TABLE 27

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION  
VARIABLE FOR THE MATHEMATICS MAJORS COMPARED BY  
CURRICULA USING THE SELECTED SVIB SCALE  
WITH THE HIGHEST SIGNIFICANT  
LOADING ON EACH FACTOR\*

Comparison Groups	Variable					
	1	2	3	4	5	6
Group A (N=10)	57.23	43.23	42.81	54.72	39.42	61.50
Group B (N= 7)	52.73	51.91	50.05	51.83	49.34	55.12
Group C (N=14)	49.92	45.83	48.47	52.60	48.19	58.01

\*A Chi-square value of 20.76 with twelve degrees of freedom does not support the hypothesis that there is a significant difference ( $p=.05$ ), between the means of the three groups; however, the difference of the means is approaching the Chi-square value of 21.03 that was needed for significance at the .05 level.

TABLE 28

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION  
VARIABLE FOR STUDENTS GROUPED BY CURRICULA  
DISREGARDING SUBJECT FIELDS\*

Comparison Groups	Variable					
	1	2	3	4	5	6
Group A (N=78)	50.81	50.79	50.58	48.35	50.61	48.11
Group B (N=70)	50.21	50.84	53.18	51.78	51.12	50.51
Group C (N=84)	46.62	49.81	48.99	49.15	51.39	53.99

\*A Chi-square value of 35.69 with twelve degrees of freedom indicates a significant difference ( $p=.001$ ) between the means of the three groups.

TABLE 29

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION  
VARIABLE FOR EACH SUBJECT FIELD  
DISREGARDING CURRICULA\*

Comparison Groups	Variable					
	1	2	3	4	5	6
English (N=131)	48.38	50.91	49.70	48.97	51.33	49.03
Foreign Language (N= 42)	49.49	53.84	51.81	50.68	52.74	51.77
History (N= 28)	47.76	47.72	56.02	47.63	53.17	50.50
Mathematics (N= 31)	52.91	46.37	47.00	53.12	45.63	58.49

\*A Chi-square value of 63.38 with eighteen degrees of freedom indicates a significant difference ( $p=.001$ ) between the means of the four groups.

TABLE 30

TRANSFORMED MEAN T SCORES FOR EACH DISCRIMINANT FUNCTION  
VARIABLE FOR THE SECONDARY AND ELEMENTARY  
EDUCATION STUDENTS\*

Comparison Groups	Variable					
	1	2	3	4	5	6
English (N=44)	49.99	52.61	49.90	47.00	51.12	45.31
Foreign Language (N= 9)	50.64	54.59	54.83	47.65	54.67	48.72
History (N=15)	49.04	48.19	55.22	48.90	54.13	47.04
Mathematics (N=10)	57.23	43.23	42.81	54.73	39.43	61.50
Elementary (N=51)	54.03	47.95	47.78	51.48	45.25	46.61

\*A Chi-square value of 84.52 with twenty-four degrees of freedom indicates a significant difference ( $p < .001$ ) between the means of the five groups.

#### BIBLIOGRAPHY

#### BIBLIOGRAPHY

1. Achauer, M. P. "The Analysis of Vocational Interest of Teachers College Freshmen and Senior Women and Relationships of Background Experiences to these Interests." Abstracts of Doctoral Dissertation. Lincoln, Nebraska: University of Nebraska, 1942, 67-72.
2. Anderson, Harry E., Jr. "A Factorial Study of the Female Form of the SVIB." Journal of Applied Psychology 49: 270-273; August 1965.
3. Anderson, Harry E., Jr., and Barry, John R. "Occupational Choices in Selected Health Professions." The Personnel and Guidance Journal 44, 177-184; October 1965.
4. Anderson, Mary R. "A Descriptive Study of Values and Interests of Four Groups of Graduate Women at the University of Minnesota." Dissertation Abstracts 12.
5. Anderson, T. W. Introduction to Multivariate Statistical Analysis. New York: John Wiley and Sons, Inc., 1958. 133-137.
6. Berdie, Ralph F. "Aptitude, Achievement, Interest, and Personality Tests: A Longitudinal Comparison." Journal of Applied Psychology 39: 103-114; 1955.
7. Carter, A. D.; Pyles, M. K., and Eutnall, E. P. "A Comparative Study of Factors in Vocational Interest Scores of High School Boys." Journal of Educational Psychology 26 81-98; 1935.
8. Crissy, W. J. E., and Daniel, W. J. "Vocational Interest Factors in Women." Journal of Applied Psychology 23: 488-494; 1939.
9. Darley, J. G. Clinical Aspects and Interpretations of the SVIB. New York, The Psychological Corporation, 1941, cited by Anne Cawley in the Genetic Psychological Monograph Journal 35: 185-247; May 1947.
10. Duntzman, George N. "Discriminant Analysis of the SVIB for Five College Curriculums." Journal of Applied Psychology (in press).

11. Fitzgerald, Laurine E. "Counseling and Guidance for Women: A Selected Annotated Bibliography, 1962-64." National Association Women's Deans and Counselors Journal 28: 136-142; Spring 1965.
12. Hoyt, Donald P., and Kennedy, Carroll E. "Interest and Personality Correlates of Career-Motivated and Homemaking-Motivated College Women." Journal of Counseling Psychology 5: 41-49; 1958.
13. Johnson, Palmer O., and Jackson, Robert W. B. Modern Statistical Methods: Descriptive and Inductive. Chicago: Rand McNally and Company, 1959. 450 p.
14. Kassarjian, Harold H., and Kassarjian, Waltraud M. "Occupational Interests, Social Values and Social Character." Journal of Counseling Psychology 12: 48-54; 1965.
15. Lewis, Edwin C. "Counselors and Girls." Journal of Counseling Psychology 12: 159-166; 1965.
16. Report of the President's Commission on the Status of Women. American Women. Washington, D. C.: U. S. Government Printing Office, 1963. 86 pp.
17. Strong, Edward K., Jr. Vocational Interests of Men and Women. Stanford, California: Stanford University Press, 1943.
18. Stuit, Dewey B. "A Study of the Vocational Interest of a Group of Teachers College Freshmen." Journal of Applied Psychology 22: 527-533; 1938.
19. Super, Donald E. The Psychology of Careers. New York: Harper and Brothers, 1957.
20. Thurstone, L. L. "A Multiple Factor Study of Vocational Interests." Personnel Journal 10: 198-205; 1931.
21. Whittenborn, J. R.; Triggs, F. O.; and Feder, D. D. "A Comparison of Interest Measurement by the Kuder Preference Record and the Strong Vocational Interest Blank for Men and Women." Educational and Psychological Measurement 3: 239-257; 1943.

## OTHER REFERENCES

- Christensen, Clifford M. "Multivariate Statistical Analysis of Differences Between Pre-Professional Groups of College Students." Journal of Experimental Education 21: 221-232; March 1953.
- Freedman, Mervin B. "The Role of the Educated Woman: An Empirical Study of the Attitudes of a Group of College Women." The Journal of College Student Personnel 6: 145-155; March 1965.
- Gage, N. L., editor. The American Educational Research Association. Handbook of Research on Teaching. Chicago: Rand McNally and Company, 1963.
- Hewer, Vivian H. "Vocational Interest-Achievement-Ability Interrelationships at the College Level." Journal of Counseling Psychology 4: 234-238; 1957.
- Holsinger, Karl J., and Harman, Harry H. Factor Analysis. Chicago: The University of Chicago Press, 1941.
- Layton, Wilbur L., editor. Minnesota Studies in Student Personnel Work. The Strong Vocational Interest Blank: Research and Uses. Minneapolis: University of Minnesota Press, 1955.
- McNemar, Quinn. Psychological Statistics. New York: John Wiley and Sons, Inc., 1949.
- Tatsuoka, M. M., and Tiedeman, D. V. "Discriminant Analysis." Review of Educational Research 24: 402-420; 1954.
- Thurstone, L. L. Multiple-Factor Analysis. Chicago: The University of Chicago Press, 1947.

#### BIOGRAPHICAL SKETCH

Wilhelm Karl Mayer was born in Chicago, Illinois, on November 7, 1929. His undergraduate and Master of Education work was done at the University of Illinois. He received his Bachelor of Science degree with a major in Education from the University of Illinois in 1960 and a Master of Education in Guidance and Counseling in 1961.

While pursuing his graduate work at the University of Illinois he taught in the Engineering Department. From 1961 to 1963 he served as the Director of Guidance at Unity High School, Tolono, Illinois. His present position is Assistant Professor of Education, in the department of Personnel Services, at the University of Florida.

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Wilhelm Karl Mayer is married and is the father of two children. He holds membership in the American Personnel and Guidance Association, North Florida Personnel and Guidance Association, Kappa Delta Pi, and Phi Delta Kappa.




This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Education and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Education.

August 13, 1966

  
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